

RESEARCH

Benjamin Krischan Schulte

Staying the Consumption Course

Exploring the Individual Lock-in
Process in Service Relationships



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Process in Service Relationships

Benjamin Krischan Schulte
Berlin, Germany

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Benjamin Krischan Schulte

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List of Abbreviations

ANOVA	Analysis of Variance
CSI	Customer Susceptibility to Interpersonal Influence
D/O	Consideration to Drop Out
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
EPS	Extended Problem Solving
FUB	Freie Universität Berlin
LPS	Limited Problem Solving
MCAR	Missing Completely At Random
N/A	Data Not Available
PC	Personal Computer
PFC	Preference for Consistency
R	“R” Environment for Statistical Computing
REM	Regret Experience Measure
RQ	Research Question
SPSS	Statistical Package for the Social Sciences
SSTS	Situation Specific Thinking Styles
TIPI	Ten Item Personality Inventory
VHS	Video Home System
WOM	Word of Mouth

1. Introduction

“Human life occurs only once, and the reason we cannot determine which of our decisions are good and which bad is that in a given situation we can make only one decision; we are not granted a second, third, or fourth life in which to compare various decisions.”

Milan Kundera (1984), *The Unbearable Lightness of Being*

1.1 Problem Area

Decisions we make in our lives often lead us down a path. Picking a place to live, a partner to live with, a major in high-school, a subject of study or an area for job training are good examples. These *watershed* decisions do not come easy and we are uncertain about quality and outcome of our options. With limited time, choices, and resources on our hands we make these complex decisions both under social influence and influenced by expectations based on our past experience. When we evaluate them afterwards, we at times regret the path chosen and consider other paths.

The process following such decisions leads us further down the path determined at the time of the decision. Evaluation occurs regarding the decision, comparing available choice alternatives and future prospects at the beginning of and during the process. When these evaluations are not in favor of the choice – we are dissatisfied with the process or the outcome – we do not quit easily, or at all. We often stick to a decision and remain loyal for various individual reasons. Conceivably because it is hard to evaluate other possible paths or return to the outset, we have good reasons to stay and, as the quote by Kundera (1984) suggests, we often can only make one such decision at a time. This may make it more and more difficult to exit a path.

In many cases such decisions entail a consumption process consentient with economic principles: The decision is made in a market from available choices and depends on financial resources, ability, individual and environmental influence. There is marketing activity in these markets in order to decrease the market’s inherent uncertainty and attract appropriate consumers to make choices. The relationship term has entered the area of marketing research to better describe the process properties and the relational aspect of such decisions, including those for child care or schooling, education, healthcare and doctors, profession and place of residence. Loyalty to such a decision or *relationship* may have good reasons. In some cases however, dissatisfaction, lack of

commitment, and regret cause us to reconsider the path. Frequently, individuals end up remaining loyal to the path and try to reconcile their evaluation with their loyalty.

Consider the path following a decision in *higher education*. The educational path is entered with incomplete information about the choices and consequences, insecurity about future employment opportunities, influenced by an individual's preferences and background – a good example for uncertainty about the outcome of a decision that has characteristics of consumption. Sometimes, people get off their path and try something else, but in most cases, people maintain a particular consumption *course* once taken. At least some students at any given time consider dropping out because they perceive a lack of fit. The reasons to stick to a path despite such a perceived lack of fit can be various, sometimes unconscious and rarely only – or even primarily – be attributed to an objective evaluation in favor of the current path.

1.2 Motivation, Relevance, and Research Questions

The motivation to explore individual persistence and loyalty regarding important decisions in consumption and its process spans various research disciplines. Much of behavioral research is interested in explaining individual decision behavior in complex contexts and with counterintuitive loyalty outcomes. An explanation employed in research in order to describe maintenance of such a path contrary to individual evaluation is the **lock-in effect** – referring to persistence in a decision.

The interplay of satisfaction and loyalty, decision-making and regret, and process elements of service relationships, is relevant for such lock-in. Lock-in can occur for consumption goods that are purchased repeatedly despite the availability of superior alternatives. This work however focuses on more fundamental individually important decision paths, like the ones referred to in the introduction. It proposes that some individuals in important consumption decisions experience individual lock-in at a point of such a relationship process, where *individual path dependence* leads them to be loyal – i.e. persist in the choice – despite a lack of fit in cognitive perception of the decision or the process.

The term lock-in is used spuriously throughout the fields of *economics*, *marketing* and *consumer behavior*, describing different things on different economic layers. Tapering, inhibition of the latitude of decisions and intensity of commitment to a path are common themes. But how does lock-in work in such consumption processes and are there observable and potentially controllable mechanisms in place that lock individuals in? *Path dependence research* has come a long way in answering this question and the

answer appears to be yes. The extensive research in this area provides a concept of the lock-in process and the conditions it entails. At the onset, research took an aggregate view of the lock-in phenomenon, but the relevance of the individual level as the basic decision level is implicitly and explicitly evident. Mechanisms were identified for reinforcing path dependence both with individuals and on higher levels. Correspondingly, there have been calls for increased consideration of interdisciplinary research with regards to sub-optimal process outcomes and path dependence (Garland 2005).

The decision is a central aspect of individual path dependence. The consumption context, particularly its cognitive and psychological dimension, makes the phenomenon interesting for *consumer behavior research*. There the described outcome is also referred to as *consumer lock-in*. Even though a clear conceptualization in conjunction with path dependence is still lacking, individual decisions and persistence are well understood. This work can contribute to this body of research by pointing to the process dimension of complex decisions and uncertainty considerations. Such decisions are relevant and require a clearer model to identify the phenomenon in research as well as in practice.

This also points to the relevance of the described phenomenon in related fields. One example is the often cited, *inextricable*, and still incompletely conceived connection of the satisfaction and loyalty constructs (Oliver 1999) which is of central interest in the service and relationship marketing fields. Satisfaction is widely assumed to lead to loyalty. While increased satisfaction is a central goal for services marketing activity, many researchers have identified this link to be weak in the development of service relationships. Defection of consumers occurs even at high levels of satisfaction and other factors must be relevant in this realm, telling companies to *learn from customer defections* (Reichheld and Sasser 1990; Reichheld 1996). *Customer relationship development* is congruently one of the future directions stated for relationship marketing by Patterson and Ward (2000). This work views the described relationship from the opposite angle, considering dissatisfied consumers who nonetheless stay loyal. Such loyalty without a positive attitude towards a product or a provider has also been described as *locked in* by some researchers (Farrell and Klemperer 2007; Farrell 1987; Klemperer 1987; Shapiro and Varian 1999). There is however limited understanding of the individual cognition in the process, including the behavioral and attitudinal aspects of this phenomenon. The need for a clear model of what lock-in means in this context motivates this work. The managerial implication of this goal could be summarized as telling companies to also *learn from loyal customers*, in order

to increase quality of service and better fulfill customer expectations (Parasuraman, Zeithaml, and Berry 1985a). The following research questions guide this work:

RQ 1: Why do individuals stick to a consumption process in a manner that can be described as locked-in?

RQ 2: What type of consumption decision is likely to facilitate consumer lock-in?

RQ 3: How does the consumer lock-in process work and what mechanisms work for the development of locked-in consumption behavior? Do these mechanisms justify calling the lock-in path dependent?

RQ 4: How does the modeled understanding of the phenomenon unfold empirically in a consumer relationship that fits the properties of an individual path dependent process?

The first three questions aim at a theoretical reasoning for the described phenomenon, based in research. They are answered based on existing research, forming propositions. These propositions are summarized in the development of a process model for the consumer lock-in process in services, based on an understanding of individual lock-in in path dependence. The last question aims at an empirical assessment of the theoretical model. Hypotheses regarding the empirical context are derived from the model and then tested in an explorative panel study, employing qualitative and quantitative methods.

1.3 Structure of this Work

To answer the research questions, this work follows the structure presented in Figure 1. In Section 2 the **theoretical foundation** indicates phenomena and relevant aspects of individual behavior that contribute to an outcome that implies *inflexibility*, *rigidity* or *persistence*. This section brings the different strands of research in path dependence, consumer behavior and services and relationship marketing together in developing propositions on properties of the consumer lock-in process.

In Section 3 the relevant theoretical points are summarized in a **general model** of the individual lock-in process in the context of service relationships. The propositions developed in Section 2 are integrated with the process model and consumer lock-in mechanisms are described with regards to relevant switching costs. The primary contribution of this research is this model that reflects the relevant aspects of the development of individual path dependence in continuous service relationships. The model can be adapted to particular service relationship contexts. The section ends with

an introduction to research idiosyncratic to the field of empirical inquiry: higher education services, which inspires the adaptation of the general model. Hypotheses are derived to test for the manifestation of consumer lock-in.

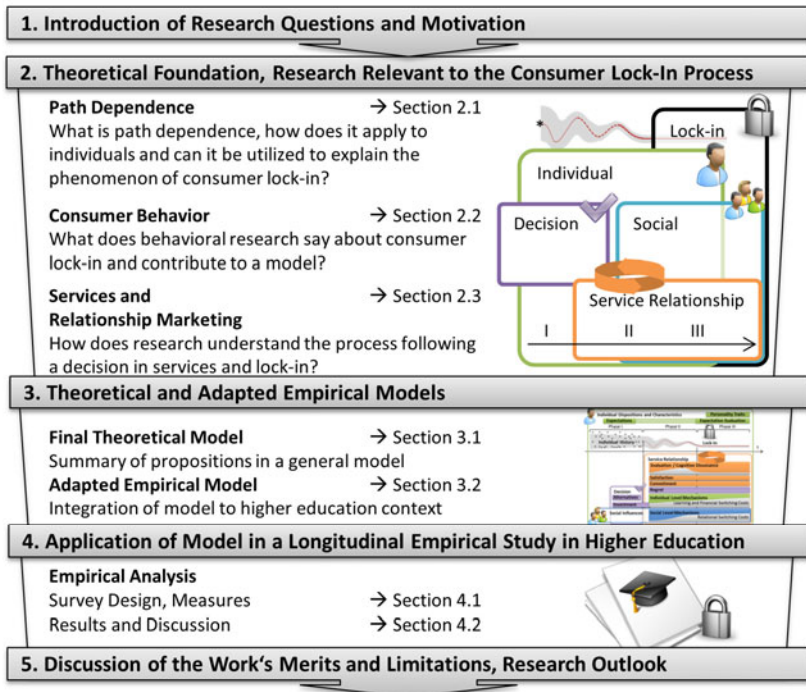


Figure 1: Structure of this Work and Logical Contents.

In Section 4 the methodology and design of the **explorative empirical study** are presented and the results analyzed. The study serves both to validate the general model as well as the underlying assumption that consumer lock-in is a phenomenon that can be identified for some students in terms of the decision context, mechanisms and a phase-based process.

Section 5 provides the **final discussion** of the merits and limitations this work provides to the different research disciplines presented in Section 2 and beyond. Since the developed model is adaptable to different contexts, as is shown in Section 4, other relevant research areas are considered in the outlook.

The overall goal is to get a grasp on an elusive phenomenon that has an individual psychological as well as a social, and a path process dimension – *consumer lock-in*.

This is achieved through review of research, deduction of model implications, and an empirical test of the model. The symbols are used throughout this work; they are detailed in Appendix A.

2. Theoretical Foundation – Path Dependence, Consumer Behavior, and Service Relationship Research

Not every decision made in consumers' daily lives is alike and the phenomenon described in the introduction may only apply to certain situations. The first research question of this work breaks this phenomenon down to its constituting features.

RQ 1: Why do individuals stick to a consumption process in a manner that can be described as locked-in?

Elaboration of the central theoretical terms is necessary to answer this question. This includes path dependence on the individual level, sticky or persistent consumer behavior, and lock-in to a consumption process that follows the decision in service relationships. To reach this goal, this theoretical section transcends three fields of research. Each part provides an outline of relevant aspects mentioned in research in the fields of path dependence, consumer behavior and relationship marketing, aimed at answering this question. Figure 2 provides an overview of the fields covered in the following sections and the main aspects they focus on in explaining consumer lock-in and answering the first research question.

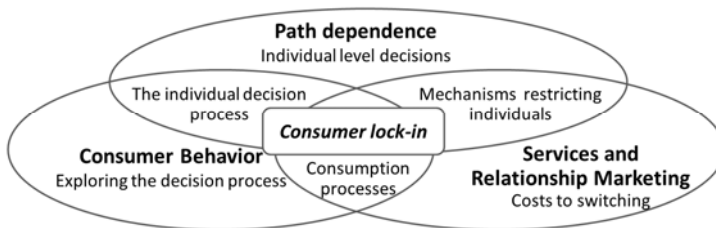


Figure 2: Intersection of Main Theoretical Fields Transcended in this Work.

Section 2.1 starts with an outline of *path dependence research* and then discusses the applicability of the organizational and individual path dependence concepts to individual persistence in a process. The focus is on the individual cognition within a course of action, so this is where the elaborations continue. The discussion ends with the proposition that the theoretical framework presented is applicable to individual consumption as an economic layer, making evident that the mechanisms at work here need to be reconsidered.

The next section focuses on *consumer behavior research*, centered on the decision making process on this economic layer: individual behavior. Four relevant aspects and concepts are differentiated in such a process: The pre- and post-decision phases, individual differences and environmental influences. After identifying service relationships as relevant, the focus moves to the consumer side as an *individual* and his perception and behavior within such a relationship process.

This leads over to Section 2.3, where the individual behavioral process is embedded in a particular consumption context: the *service relationship*. The section discusses relationship research focusing on service properties as a prerequisite for a lock-in process, the relational focus of some services and the particular mechanisms that may come to carry here. Relationship marketing is discussed, particularly with regards to the strategic dimension of marketing activity in such services. The relational aspect is identified as the relevant mechanism for lock-in in service relationships. In certain service contexts, the two parties interact with each other and also third parties are involved on a social level, particularly in the kinds of services relevant for this work.

At the end of each part describing a research field, the connection and contribution to the goal of this work are summarized with regards to the creation of a theoretical model of consumer lock-in in a service relationship. Research propositions are derived and a definition of consumer lock-in for this work is developed. These are relevant for the model as the findings of this section form the foundation of the theoretical model development.

2.1 Path Dependence and Individual Lock-in

To understand the phenomenon of lock-in, Section 2.1.1 introduces to the origins of the path dependence concept in research and the initially outlined mechanisms leading up to lock-in. The process character of lock-in was more clearly outlined in a body of organizational research that contributed a clear model and further developed the character of the involved lock-in mechanisms, which is outlined in Section 2.1.2.

The process and its mechanisms are described as inherently *social*. Focusing on the social science approach, the concept of increasing returns mechanisms that can amount to lock-in is further elaborated (Pierson 2000) and categorized in Section 2.1.3. Next, in Section 2.1.4, research on individual path dependence is dissected to find the constituting features of lock-in on this level, focusing on mechanisms relevant here.

Section 2.1.5 provides a summary where the phase-based elaboration from organizational research is combined with social and individual aspects. The individual

process of becoming path dependent is differentiated into three phases and propositions are derived.

2.1.1 The Origins of Path Dependence in Technology

When trying to understand how the lock-in phenomenon differentiates from other types of persistence and incorporate the process character of lock-in, there is no way around path dependence research. The character of dynamic lock-in processes is reflected in a growing body of research that started with the works of David (1985) and Arthur (1989) on path dependence in technology decisions.

Path dependent processes are governed by an actor's past decisions – while an actor may feel free and rational in a decision at any given time, he is actually constrained to a *path* due to his choice history and influenced by that of others. The common examples refer to technological path dependence: The dominance of QWERTY keyboard layouts (David 1985) and the prevailing of the VHS format compared to alternatives (Arthur 1988). These technologies are assumed to have had a head start and subsequently turned out as suboptimal choices. Nonetheless there was lock-in on the market level to these technologies – alternative technologies did not have a chance of adoption. In this conception of path dependence, lock-in applies to new actors entering the market. Their *rational* choice is influenced by the choice history of others, up to the point where the decision is deterministic – a market lock-in to one technology.

This classic path dependence concept points to the relevance of *self-reinforcing mechanisms* or *increasing returns mechanisms* as a cause of developing persistence over the course of the process due to a *selection advantage* that results in lock-in. The scope of this concept also includes *social dynamics* involving social interactions among economic agents (David 2007). In his work on *Self-Reinforcing Mechanisms in Economics*, Arthur (1988, 2004) describes his idea of dynamic systems in economics that work similar to those observed in physical and biological systems. Local positive feedback mechanisms are introduced as a situation where an initially arbitrary advantage is positively reinforced and magnified. He describes four mechanisms reinforcing such initial advantages as relevant for the development of technological path dependence: *Large set-up or fixed costs*, *learning effects*, *coordination effects* and *adaptive (self-reinforcing) expectations*. These mechanisms raise barriers – costs that have to be overcome to exit the path.

The centrality of the mechanisms is a shared feature of all notions of path dependence found in research, while they differ depending on the context. The following points illustrate Arthur's understanding of these mechanisms in technologies:

- The *initial* and/or *sunk investment costs* incurred due to a technology choice reinforce a choice, because they are difficult to transfer or reverse.
- *Learning* occurs due to idiosyncratic experience in a given technology, which similar to sunk costs is hard to transfer and increases the value of the technology (Arrow 1962).
- *Coordination* with other agents on a choice benefits the technology down the road, analogous to the concept of network externalities (Katz and Shapiro 1985, 1986).
- Similarly, dynamic *expectations* due to experience and belief of agents reinforce the selected technology.

The consideration of these mechanisms however goes further than technologies (Arthur 1989; David 1985); similar effects have been identified for path dependence in institutions (North 1990), in political processes (Pierson 2000) and organizations (Schreyögg and Sydow 2011; Sydow, Schreyögg, and Koch 2005, 2009). The organizational path dependence concept presented in the next section left out *large set-up or fixed costs (economies of scale and scope)* and *network externalities* but added the aspect of *complementary effects*, further adding to a mix of mechanisms that appear to depend on the context of lock-in.

Mechanisms in this context are described as sequential along the process, reinforcing the choice and thus leading to persistence in that choice – an equilibrium due to positive feedback that would have similarly lead to reinforcement of another choice (Arthur 1990). New entrants are faced with this situation and base their choice on a critical mass of previous adopters. Technologies available earlier have an advantage in this system, even if they are not superior.

Main features of the process in a mathematical sense are *unpredictability*, *inflexibility*, *non-ergodicity* and *potential path inefficiency* (Arthur 1994a). Random early events make the process unpredictable in the beginning. It is inflexible in that the further down one path an actor has progressed, the less flexible he becomes. Non-ergodicity refers to the chance of multiple outcomes or equilibria, with small and early events determining the outcomes. Lastly, the potential path inefficiency is defined as that a locked in choice may generate lower pay-offs than a forgone alternative. This inefficiency can take different forms and is difficult

Individual persistence is assumed to be rational in the moment it occurs. In an illustrative example, Arthur (1988) refers to an important choice phenomenon like the ones this work is focused on (pp. 13–14):

Notice that at each stage, an optimal choice is made under conditions of certainty; and so there can be no conventional economic inefficiency here. But there may exist regret. Consider the case of a person who has the choice of practising medicine or law each year. Each activity pays more, the more previous experience has been accumulated. Suppose the rewards to practising law rise rapidly with experience but then flatten out; and those to practising medicine are small initially but eventually surpass those of law. According to the theorem, whichever activity the person chooses, he will continue to choose thereafter. If he has a high discount rate, he will choose law. And this choice will at all stages continue to be rational and superior to the alternative of first-year payoff as a doctor. Yet there may exist regret, in the sense that after N years in the law, an equivalent time served in medicine would have paid more at each time into the future. Self-reinforcement can lock a single rational economic agent in to one activity, but not necessarily the one with the best long-run potential.

The important individual choice phenomenon of an education and profession for future income is inherently individual and does not necessarily have direct aggregate level path dependence implications. If there is potential for *regret* regarding the decision that signifies lock-in, there must be some conscience on the individual level regarding the mechanisms at work and their effect on the individual, rather than on new market entrants. Section 2.1.4 focuses on the individual in this context and identifies levels on which path dependence mechanisms work regarding individual lock-in.

Pierson (2000) adds the relevance of *sequencing* to the features of a path dependent process, where early events are much more relevant for the outcome than later ones. In an effort of structuring this general idea of path dependence, a conceptualization from organizational research orders its constituting features in a process, offering a more rigorous approach to understanding the phases and the social nature of the process.

2.1.2 Conceptualizing the Process of Path Dependence in Organizations

Organizational path dependence research provides a conceptual framework, further unfolding the process of becoming locked-in and unfolding the operation of the lock-in mechanisms (Sydow, Schreyögg, and Koch 2005, 2009). According to this research,

lock-in is caused by a *predominant social influence* (Sydow, Schreyögg, and Koch 2009).

While the original path dependence concept looks at technological adoption processes, this research considers the individual and organizational commitment to an activity, a process, a *course of action*. Schreyögg and Sydow (2011) develop a process view of path dependence for organizations, which captures this *action sequence* aspect; prerequisite for this organizational process theory is a *sequence of events, decisions and/or actions, which is imprinted by the foregoing course of actions and its characteristics*. Sydow et al. (2005) also state: “*The assumption of rational choice on the individual level as a starting point is problematic*” (p. 10), affirming that *bounded individual rationality* (March 1978) is an important predecessor of lock-in on the individual- and higher levels. Economics has long employed this view of actors: Arthur (1994b) refers to *complex decision situations* and inductive reasoning potentially leading to a temporary lock-in of psychological patterns and path dependence (p. 410).

A central contribution to the original path dependence conception is pointing out that Arthur’s proposed properties of path dependence come to carry at different points in the process. Describing the social process of organizational decision-making and subsequent mechanisms, the process framework differentiates three consecutive and sequential phases with distinct regimes in a lock-in process of organizational systems. This means that there is technically only the initial decision situation; nevertheless subsequent behavior in the process is contingent on this decision for a course of action. This conception is also applicable to levels other than organizational decision-making. The distinction between the three phases is shown in Figure 3 and detailed in the following.

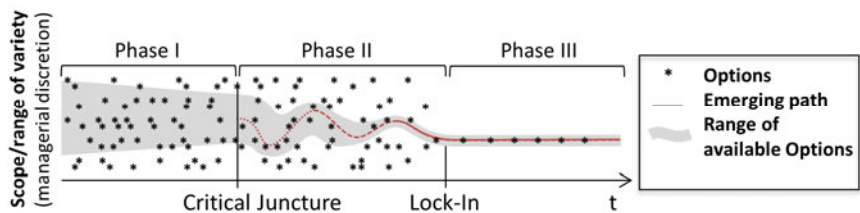


Figure 3: Phase Based Constitution of an Organizational Path according to Sydow et al. (2009), p. 692.

Phase I, the *preformation phase*, entails a broad scope of potential action where options are open. Here the features of *non-predictability* and *non-ergodicity* come into play, which are of less importance in later phases. The shadow indicates the narrowing of choices. Here, a decision, event, or action taken can mean a critical juncture – the entry of phase II.

In **phase II** – referred to as the *formation phase* – the mechanisms make the critical decision or action gradually less reversible. These dynamics can be assumed to differ by context, while following an increasing logic over the course of the process. While decisions outside of the path are still attainable, they are less and less probable – a path is evolving. In this phase the *inflexibility* and *potential inefficiency* start evolving. For organizational path dependence, a *dominant action pattern* is said to emerge, indicating an exploration and elaboration of the choice made. This behavioral argument is reinforced by examples from the organizational realm, namely uncertainty avoidance, cognitive biases and power processes. Sydow et al. (2009) identify *coordination, complementary, learning* and *adaptive expectation effects* working in this phase as mechanisms towards a lock-in (p. 698).

Phase III is entered when the mechanisms reinforcing the path have increased to a point of *lock-in*, where the outcome is deterministically reproduced and flexibility is lost. This lock-in is described as any combination of *cognitive, normative* and *resource-based* persistence leading to replication of an action pattern (Sydow, Schreyögg, and Koch 2009). The lock-in mechanisms do no longer seem to play a role. Individual and organizational decision processes reproduce the locked-in outcome, although the lock-in phase in the organizational context is described as less deterministic than technological lock-in. This is because it is notably more social and leaves room for variation, while reproduction is deeply embedded in practice. It is similarly signified by a loss of adaptability to new circumstances or better alternatives.

This phase-based differentiation makes clear that sequencing is a constituting feature in organizational path dependence – the sequence leading into lock-in is decisive. Mechanisms, like the ones described by Arthur, only become relevant after a decision is made and – under certain conditions – can lead into lock-in. The adapted conception of lock-in mechanisms in organizational path dependence describes them as follows:

- *Coordination Effects* refer to the diffusion of institutions or rules in organizations that facilitate efficient action and make future coordination more attractive (North 1990).

- *Complementary Effects* refer to a synergy of interrelated resources that reinforce a process (Pierson 2000).
- *Adaptive Expectation Effects* refer to an interactive formation and development of preferences based on social influence, increasing the attractiveness of a popular choice (Leibenstein 1950).
- *Learning Effects* refer to increasing efficiency due to process specific experience and skill accumulation (Argote 2012).

The mechanisms identified for this context imply a move of attention closer to the individual as a decision-maker and the individual cognition and motivation, making this research particularly interesting for the focus of this work. Learning effects for instance were adopted from research focused on the individual. The other mechanisms as well are effects found in individual behavior as much as they are in organizational behavior. They are explained in terms of a *social* dimension, with regards to reproduction. This is a viable route for consideration in the individual because it becomes clear that they are *individual* and *context specific*. That is why the social dimension of the mechanisms is an important basis of the phase-based model developed for the individual level process for this work.

Focus	Source of path dependencies	Approach for path-breaking concepts
Cognitive	Self-reinforcing blind spots („we don't see that we don't see“); reflection trap	Organizational discourse, supplemented by information from external consultants etc., new knowledge/ perspectives
Emotional	Self-reinforcing or escalating commitment (“this commitment is our identity and the more we are committed the stronger is our identity...“); commitment (or identity) trap	Behavioral interventions, mainly on the group level
Social	Self-reinforcing norms, standards and basic assumptions (“what we are doing is right because we are doing it...“); normative (or cultural) trap	Systematic interventions by irritating the social system in order to break systematic routines and patterns
Resource	Self-reinforcing resource allocation (“if we gave up this investment it would be wasted...“); sunk costs trap	Reallocation of resources, taking into account prevailing cognitive and normative rules

Table 1: Anchors for applying Path-breaking Concepts by Sydow et al. (2005), p. 25.

The individual awareness of a lock-in situation is questionable however. This becomes particularly apparent when considering ways of path-breaking, as described by Sydow et al. (2005). They define the sources of path dependence and the foci of path breaking concepts as shown in Table 1.

The way the authors describe them, the sources of path dependence mechanisms can work on the cognitive, emotional, social, and resource level and lead to individual *unawareness* of lock-in. If the actor or organization becomes aware of the lock-in, there is potential to unlock or break a path, which is described in the approaches column. While path breaking or unlocking is not in the focus of this work, considering the unconsciousness of the lock-in is important when examining it in the individual. In the next section the mechanism levels are elaborated for the individual in a social context, outlining the distinctions between the levels of the mechanisms used in organizational research and examining their applicability in social processes.

2.1.3 The Social Side of Lock-in Mechanisms

The premise of the previous section was that social processes are susceptible to path dependence. The researchers also quoted the work of Pierson (2000), who explains that, for political processes, the temporality of events matters as much as the *increasing return effects* in rendering path dependent outcomes. His analysis stresses the increasing returns understanding of the mechanisms and they are applied to political processes, identifying causes and consequences in this context.

Mechanisms that lead to restriction can ultimately result in lock-in sharing the feature that they entail continuous feedback over the course of the path. This feedback *reinforces* the initially perceived good and rational choice. Technology adoption and distribution are governed by this mechanism on an aggregate level, but have an organizational and social network dimension as well. Carruthers (1997) points this out for electrical technology, citing “*social lock-in*” (p. 6). As this work focuses on the individual process of becoming path dependent under *interdependence*, the kind of intra- and inter-individual mechanisms described in this stream of research are relevant. Pierson (2000) also employs the path dependence conception as “*social processes that exhibit increasing returns*”, where the *increasing returns* are caused by an increase of the benefits a current *activity* renders relative to other possible options. He describes the political process as a development of social understanding. Next to *high startup costs* and *learning effects*, this understanding creates *network effects* and *adaptive expectations* in that it is socially shared.

The work of Dobusch and Schüssler (2012) provides a useful categorization of lock-in mechanisms on different levels. The researchers also argue that there is an interaction of the different mechanisms. They analyzed different prominent path dependence cases and come to the conclusion that there are different mechanisms at work

depending on the lock-in situation and context. They also differentiated the mechanisms in terms of their operational levels – the *local level* and the *population level*. One relevant case they examine is the dominance of Microsoft Windows and Office in the PC software market, where they categorize the lock-in mechanisms as shown in Table 2. Dobusch and Schüssler (2012) also assume that there is interaction between the levels and that “*path dependence is rarely driven by just a single mechanism*” (p. 638).

Associated self-reinforcing mechanism	Level	Mechanism description
Investment (Large set-up or fixed costs)	Local	Idiosyncratic initial and ongoing investment in process
Learning effects	Local	Idiosyncratic learning regarding process
Complementarity effects	Population	Reciprocal social learning over course of the process
Coordination effects	Population	Social coordination with actors
Expectation effects	Population	Interactive development of preferences

Table 2: Categorization of Mechanisms regarding respective Level of Application and Description of Effect in the Individual Process, based on Dobusch and Schüssler (2012).

The process Pierson (2000) describes is close to the type of social process involved in a consumption decision and the following consumption processes. This process has to be understood in terms of the path it took to get there. While Pierson claims that consumption processes entail short causal chains and require little coordination, this is not true for all kinds of decisions in the economic realm. In cases of extended and continuous commitment to a consumption decision with a social dimension, such processes are bound to occur as well. In Section 2.2 features of consumption decisions relevant in this realm are identified, such as individual importance, necessary investment, and exclusivity. In fact some researchers have already analyzed path dependence affecting the individual and identified different relevant levels influencing individual path dependence.

2.1.4 Individual Path Dependence and Mechanisms – The Research Gap

As introduced, the concept of path dependence at its core has the notion that dynamic processes in the economic realm can lead to the selection of an inferior outcome over time. This occurs due to historical events and contrary to popular economic theory. According to the concept, a path persists and is not – or cannot – be corrected, even if the rationale would suggest a correction.

Arthur (1988, 1989) observed an aggregate level of adoption, but referred to individual choices that were influenced by adoption levels and resulting in increasing returns.

Later research built upon this premise and constructed social influence on other layers of the economic system, including individual decision-making (Aversi et al. 1999; Castaldi, Dosi, and Paraskevopoulou 2011). It is plausible to further evaluate the individual as an essential element in this context, since individual path dependence arises regarding an individual sequence of behavior or “*microconsumption*” (Aversi et al. 1999). When the individual is locked in and the lock-in also affects the individual scope of behavior rather than that of new entrants into a market, different concepts of the mechanisms behind the lock-in are necessary. Here in fact, the market level only plays a role initially, when the adoption decision occurs. In the following, research with a focus on individual consumption is summarized, in order to shed light on this level and the goal of this work.

Frank (2007) argues for application of the path dependence and lock-in concept on the consumption side of the economy, where positive feedback can lead to suboptimal consumption choices in individuals. His empirical example is overconsumption of meat in western cultures, which he identifies as locked in. His research clearly aims at locked-in consumption due to mechanisms influencing individual behavior and causing persistence. The employed perception is based on cognitive dissonance to explain the habit persistence in individuals and states that “[*e*]ndogenous preferences and positive feedback in utility from consumption, along with social, institutional, and behavioral factors can lead to path dependence and the persistence of suboptimal consumption choices” (Frank, 2007, p. 320).

Firm-, Market Level	Social Level	Individual Level
Society, culture, marketing (institutional interests)	Social acceptance, consumption of others, group influence (sociological aspects)	Habituation, “rational addiction”, limited cognitive capacity (limited rationality)

Table 3: Levels of Mechanisms causing Individual Path Dependence, based on Frank (2007).

Frank (2007) differentiates “positive feedback” mechanisms by the level on which their feedback reinforces the path i.e. bars a behavioral change, as shown in Table 3. Apart from the *firm* and *market level*, the *individual* and *social levels* are identified as relevant influencing a path dependent outcome, in the form of an evolving process that shapes the individual’s present perception in a certain way. This categorization equals the population-level, local-level dichotomy presented in the previous section. Population level mechanisms are being split into market and more direct social level effects, while the local level mechanisms are subsumed under the individual level, while leaving out the investment factor, such as sunk costs. According to him, this “*lock-in depends not on technology as much as on social, psychological,*

organizational, and economic factors that have not previously received much consideration in terms of their role in creating path dependence” (Frank, 2007, p. 342). These levels provide a viable basis for consideration of lock-in mechanisms for individuals and consumers.

But this work is not alone in arguing for an extension of the path dependence concept to individual consumption. Research employing the process-based path dependence concept from organizational research has adopted a similar angle, taking a closer look at the individual process development. The individual path dependence mechanisms differentiate as follows: The *individual* level combines barriers that work on the personal level like experiential aspects, learning, and an individual’s investment in a choice. The *social* level incorporates barriers regarding interpersonal aspects that have the character of increasing returns. Table 4 summarizes the studies presented and differentiates the mechanism categorizations.

Author(s), year	Focus	References to the individual level	References to the social level
Frank, 2007	Lock-in to consumer preferences: meat consumption in western societies	Rational taste formation Non-rational habit formation Learning Effects (knowledge and skill)	Bandwagon effect Social pressure
Bach, 2008	Service Consumer Lock-in to legacy technology inhibiting superior service diffusion: internet access services	Consumer Experience and Learning Effects	Social Coordination Effects Bandwagon effect Information Contagion
Koch et al., 2009	Decision complexity as driver of locked in decision making in cellphone contracts	Decision and Context Complexity	-
Langer, 2011	Lock-in regarding repeated decisions in smart phone choice	Complementary Effects Learning Effects	Adaptive Expectation Effects

Table 4: Literature describing Individual Path Dependence in Consumption with Mechanism Levels and their particular Effects leading to Lock-in.

Bach (2008) examined demand-side mechanisms that caused non-adoption of an otherwise superior new Internet access technology in Germany. His work was based on the premise that individual technology adoption decisions and the subsequent processes are subject to uncertainty, bounded rationality and opportunism. This conception is in line with a new information economics understanding. In it the researcher argues that services – like the Internet access services he studies – are high in experience and credence qualities, making them more difficult to evaluate in the

decision process. He concludes that herd behavior influences individual decisions in this market, making a case for social influence leading to lock-in.

Focusing only on individual decisions, the work of Koch, Eisend, and Petermann (2009) showed the relevance of the decision's *context complexity* for the development of individual path dependence and a subsequent rationality shift. This shift is the foundation for calling individual behavior path dependent. This work looks at repeated individual decisions and only describes the decision situation but does not focus on the process that follows. According to this work, some of the described self-reinforcing mechanisms from path dependence research are transferable to consumer decisions, which were also the element of empirical inquiry.

Evidence for the occurrence of path dependent behavior was also found in a round-based consumer decision-making experiment (Langer 2011). The researcher considered an aspect of *social influence* in the form of adaptive expectations developed in a social context. These social level effects at their core have the idea of decision *interdependence* as a self-reinforcing mechanism. Other mechanisms considered were *complementarity* of products and experience with the product in the form of *learning effects*. The findings supported the effect of all selected mechanisms of path dependent decision making in the experimental process. Another noteworthy finding of her work is the relevance of personality variables for path dependent decision making: Individual preference for consistency and consumer novelty seeking were found to affect individual tendency for path dependent decision making.

The reviewed works concur in that the phenomenon of individual lock-in effects is real and that it in fact has a consumption dimension. They describe forms of the individual path dependence phenomenon from different angles and with different goals, while referring to classic path dependence literature. The similarities worked out regarding the process character and mechanisms however are not unified and were adapted regarding the focus of each individual work – particularly the individual cognitive process leading into consumer lock-in remains a research gap as it still necessitates a systematic analysis. The aim of this work is to fill this gap.

2.1.5 Summary of Path Dependence in this Work and Research Propositions

This section gave an outline of path dependence research relevant to the goal of this work that demonstrates the relevance of the lock-in phenomenon on various economic layers. The last section also showed that individual decisions, path dependence and consumption have been examined in conjunction before. Research on this level has

been limited thus far, even though it was always implicitly present – particularly in the shifts path dependence research has seen in the last ten years. In the beginning, choices on the aggregate and group levels have been in the focus of research, with some notable exceptions. The general concept of path dependence continuously claimed more generality and bearing this in mind, this work proposes examining the individual level to this regard.

Prior research referred to the individual as the basic level of consideration, when identifying path dependence on higher levels. Individual cognition in path dependence processes received only little prior research attention – mostly based on repeated decisions. Individual path dependence processes however remain a gap in this otherwise extensive research realm. The focus here is set on the individual process of becoming locked in as a *boundedly rational consumer* (Aversi et al. 1999). This process is expected to be idiosyncratic and resemble the process described for aggregate path dependence.

As explained in Section 2.1.2, a shift was made in organizational path dependence research to examine organizational decisions and describing the process into lock-in here. Organization path dependence research moved closer to the individual decision level and constructed the process more rigorously. A modified version of this phase-based model is the basis of the conceptualization of the process within the individual in this work, which is proposed to hold true for individual decisions in consumption contexts as well:

Proposition 1.1: Individual lock-in is the final phase of a three phase cognitive process with path dependent properties.

This proposition aims at an adaptation of a path dependent understanding from the organizational lock-in process to individual processes, where individual behavior is locked in – leaving out aggregate effects, as only the individual is directly affected. The properties it refers to were stated by Schreyögg and Sydow (2011) as a process that encompasses at least *two actions*, that amount to a *sequence* in their own order and where the result depends on the path to get there, in the sense that *history matters*. The research outlined in Sections 2.1.3 and 2.1.4 point to the social dimension of path dependence, emphasizing mechanisms on the *individual* and *social* levels as relevant in leading to individual lock-in in consumption contexts.

While the *market* level is relevant as an overarching aspect, the following assumptions follow from the research presented:

1. The influence of society and culture is partly reflected in the social level effects.
2. The market aspects of availability and choice are reflected in the individual analysis of a consumption decision.

Additionally, *individual differences* are considered as an overarching factor, further reflecting societal shaping and individual idiosyncrasies. That is why the market level is not in the focus, but is still considered in the context of the decision situation. Rather, in the goal of explaining individual path dependence and lock-in in consumption decisions, individual and social aspects of the process are in the focus.

Proposition 1.2: Positive feedback mechanisms work on the individual and/or social level, gradually locking an individual in to a decision and the consequential path.

It is necessary to construct and differentiate what individual lock-in constitutes here. Aversi et al. (1999) introduce a cognitive dimension to the concept of individual path dependence. Other organizational researchers describe this phenomenon as cognitive entrenchment (Dane 2010). Frank (2007) employed the cognitive dissonance conception to describe the situation of such inconsistencies, with reduction as a way out.

Proposition 1.3: Individual lock-in follows a reduction of cognitive dissonance by the individual on the attitudinal level, potentially causing regret.

The evaluation and cognitive dissonance conception, along with the other dimensions of what constitutes the individual lock-in process are summarized in Figure 4. The process is individually idiosyncratic, with **individual characteristics** leading to differences influencing the process.

Phase I describes the individual consideration of choices in a market. However, as explained in the final section, the focus of consideration is not the market level and aggregate choice, but individual choice and its consequences on an individual cognitive level. The decision in this phase is reached based on *individual history* and – while assumed to be rational by the individual – is actually made under limited rationality, which has been applied to economic models in conjunction with dissonance theory (Akerlof and Dickens 1982). The choice made is exclusive and leads down a “path” – shown in red – with idiosyncratic experience and evaluation of this experience, also in the light of foregone choices: **phase II** is entered.

This phase does not yet entail lock-in; rather, the lock-in **mechanisms** build up barriers, as shown in grey, reinforcing the choice made. At the same time, **evaluation** of the choice can lead to cognitive dissonance along one or more cognitive dimensions and regret may occur. These are signifiers of perceived individual lack of fit. The mechanisms described for technological choices – *sunk costs*, *learning*, *coordination* and *expectations* – are divided into *individual-* and *social level mechanisms* and narrowed down for individuals in the Section 2.1.4. Depending on the choice context and individual disposition, different mechanisms may be dominant in reinforcing individual choice. Lock-in then is an extreme case of reinforcement that counters a motivation to reiterate the choice to reduce cognitive dissonance.

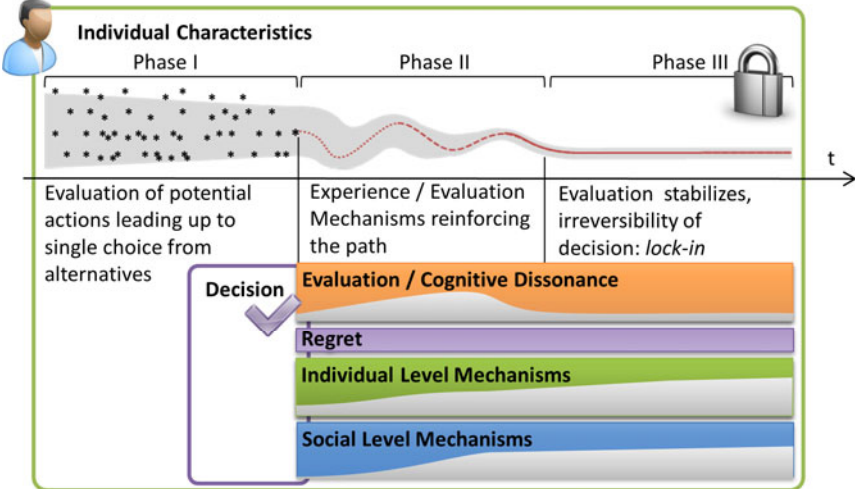


Figure 4: Individual Path Dependence and Lock-in Process Conception for this Work.

In **phase III**, cognitive dissonance is reduced and lock-in to the choice is reached. The mechanisms reinforced the choice to a state of quasi irreversibility. What the entry into lock-in on the consumer level entails will be defined later on, but as Arthur (1988) explained, regret may be one cognitive reaction to lock-in that needs to be explored. As introduced in the context of path dependence research, lock-in describes determinism in decision-making of actors. It is the central outcome of path dependent processes. The organizational phase conception however showed that there is more to the process leading into lock-in. In the organizational concept this process only starts with a decision. It then triggers a sequence of action – or inaction – with individual and social level mechanisms that may lead to lock-in. Due to the social nature of the

context, lock-in in individual decision making was mitigated to be quasi-deterministic and defined to be cognitive, normative, or resource-based in nature.

In the following section, marketing research on phenomena that adhere to the described concept is examined. Particularly, the search and decision phase (*phase I*) in consumption contexts are explored from the point of view of consumer behavior research. *Consumer lock-in* is explored and defined in the process. As a foundation for such a definition, the following sections aim to identify what establishes a lock-in with consumers and what consumption decisions best lend themselves to the type of process described by path dependence. The findings are then incorporated into the conception of the individual lock-in process.

2.2 Consumer Behavior Research – Exploring Decision-Making and Lock-in

The goal of this section is to identify research on consumer decisions and behavior that provides potential for initiating a path dependent consumption process. By shedding light on the consumer cognition and perception regarding the decision and the post-decision process, it also aims at answering the second research question:

RQ 2: What type of consumption decision is likely to facilitate consumer lock-in?

Part of this question was already subject in the previous section, where characteristics of decision processes were identified. The consumer behavioral focus of this section includes these delineations in finding appropriate contexts for the facilitation of consumer lock-in.

It commences with an upshot of the use of *consumer lock-in* conceptions in research. The term is used in economic- and marketing research to describe a situation of higher than rational commitment to a seller, but there are varying conceptualizations for consumer behavior that are contrasted in section 2.2.1. A summary of the defining characteristics of the uses of this term is provided.

In Section 2.2.2, the decision process is moved into focus. The decision stage is introduced in terms of decision psychology and the current understanding in consumer research with regards to the potential of consumer lock-in as an outcome. Consumption decisions can vary along numerous dimensions outlined here, including perceived risk, complexity, exclusivity, and so on. As lock-in and its mechanisms are more prevalent in the process that follows such a decision, this section identifies dimensions with a potential for the occurrence of consumer lock-in. Consumption processes in services – more so than goods – involve ambiguity in the decision situation and entail a process that lends them to lock-in considerations. The segment

concludes in Section 2.2.3 with a definition of consumer lock-in for this work derived from the presented works and a summary with implications for the theoretical model in the form of propositions.

2.2.1 Contrasting Conceptions of Consumer Lock-In

A series of research that started around a group of economists prominently considered markets with potential for locked-in buyers and their effect on competition (Farrell and Shapiro 1989; Farrell 1987; Gallini and Karp 1989). These works focused on sellers and the potential quasi monopoly they enjoy once a buyer makes a decision for one particular seller: “*Once a buyer begins to buy from a particular seller, he may become locked in*” (Farrell, 1987, p. 1). This enables sellers to exploit this monopoly by lowering service quality or raising prices without consumers switching – the consumers become “*captive customers*”. Buyer risk is specified as one of the implications of such lock-in, as buyers have to predict the termination likelihood, future service quality and market share in the choice situation (Gallini and Karp 1989). Examples of consumer markets with lock-in provided by the authors include the choice of a *doctor* or a *long-distance carrier* (Farrell 1987).

While this stream of research focuses on the supply side, it makes important points relevant for consumer behavior. The researchers specify that *outcome uncertainty*, *switching costs* and *inertia* are the central reasons for consumer lock-in. Learning-, transaction-, or “artificial” costs are mentioned as examples for such costs that differentiate services post-choice (Klemperer 1987).

Furthermore this research outlines a relationship focus, concluding that in the realm of such costs relationship-specific capital is formed that is worth less outside of the relationship than it is within. Farrell and Shapiro (1988) extend on this notion of sunk set up costs by giving the examples of software or workplace choice that entail idiosyncratic learning. Once a choice is made, relationship-specific assets can lock the buyer in and that “*puts her in that seller’s power in the future*” (Farrell and Shapiro 1989, p. 51). The authors assume that in cases of incomplete long-term buyer seller contracts, seller opportunism may arise. The general notion of this body of research indicates that service relationships deserve a closer look regarding their potential for consumer lock-in.

A detailed lock-in conception with a focus on the lock-in process in information services is presented by Shapiro and Varian (1999) in their book “*Information Rules*”. Referencing the aforementioned line of research, the book itself focuses on the

managerial implications that services in the information economy face. They identify switching costs as causal agents of different types of lock-in, some of which directly align with the conceptions from path dependence, as shown in Table 5.

Type of Lock-In	Switching Costs	Parallel to lock-in mechanisms
Contractual commitments	Compensatory or liquidated damages	Sunk costs
Durable purchases	Replacement of equipment; tends to decline as durable ages	Sunk costs
Brand-specific training	Learning a new system, both direct costs and lost productivity; tends to rise over time	Learning effects
Information and databases	Converting data to new format; tends to rise over time as collection grows	Coordination effects
Specialized suppliers	Funding of new supplier; may rise over time if capabilities are hard to find/maintain	Sunk costs, Coordination effects
Search costs	Combined buyer and seller search costs; includes learning about quality of alternatives	-
Loyalty programs	Any lost benefit from incumbent supplier, plus possible need to rebuild cumulative use	Complementarity effects

Table 5: Lock-in Types, associated Switching Costs and suitable Lock-in Mechanisms, based on Shapiro and Varian (1999), p. 117.

As the identified types of lock-in show, there are parallels between what Shapiro and Varian (1999) describe for the information economy and the path dependence conception – not only with regards to wording. The researchers describe a form of technological lock-in of consumers and conceptualize it as a process with positive feedback. They also refer to the history matters conception, by devising “*to understand lock-in, look ahead and reason back*” (Shapiro and Varian, 1999, p.104). Apart from contractual lock-in and durability of purchases, the parallels become apparent in *investment, learning, coordination, and complementarity* effects.

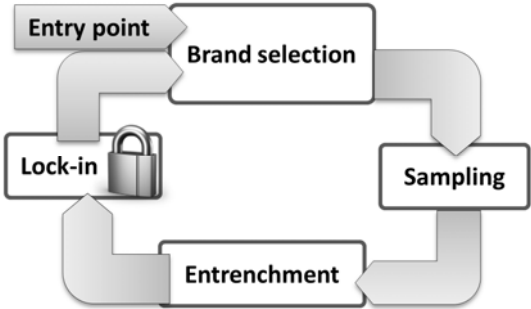


Figure 5: The Lock-In Cycle in the Information Economy by Shapiro and Varian (1999), p. 132.

As the conception of the lock-in cycle in Figure 5 shows, the authors also incorporate the idea of phases of lock-in that occur in a sequence similar to the organizational lock-in model. Following the **entry** into the process, the initial phases following the **selection** decision are **sampling** and **entrenchment** of the individual to the decision. The authors describe that buyers need to be aware of creeping lock-in in these early phases, which aligns with the path dependence conception of early events. **Lock-in** is shown as a possible late phase of the process, also influencing repurchase behavior.

The described conception refers to information services. From a consumer decision point of view, an information service is described as an *experience good* – where fit can only be evaluated post-decision. The entry culminates in a set of observations regarding what they refer to as the consumer lock-in cycle, that hold true on a more general level and in other contexts as well. As the authors point out, lock-in occurs by virtue of the choices made by a consumer. Consumers in the information economy enter a market and are confronted with a selection of brands and products sold under said brands. They then enter a phase of sampling, trying out a product and learning about its suitability to satisfy a consumer's need. Entrenchment happens when the service provides the consumer with a sort of benefit that the consumer gets used to. This is where the barriers to switching are raised: “*The entrenchment phase culminates in lock-in when the switching costs become prohibitively expensive*” (Shapiro and Varian, 1999, p. 132). These work as mechanisms and can be influenced by providers to achieve customer lock-in

The idea of *consumer lock-in* in this work differentiates from the *customer lock-in* effect. The former refers to effects on the consumer side, while the latter refers to the activities on the seller side and the managerial implications of a consumers locked in behavior. Customer lock-in is described as a desirable outcome of network externalities and standardization, which can benefit a seller in the form of customer loyalty (Hirschey 2009). Network externalities are a relevant aspect for the development of consumer lock-in and were presented as coordination effects. In some cases *customer* lock-in is also considered a strategic decision; for instance with regards to conscious product incompatibility (Gilbert and Jonnalagedda 2011), or in B2B contexts (Woisetschläger et al. 2010). These provider side aspects are not in the focus of this work and it is not implied that consumer lock-in has any – or solely – positive implications for the provider side.

It can be argued however that, according to this conception, it is in the interest of a provider of consumer goods or services to lock a customer in, as Shapiro and Varian

(1999) did. The consumer perspective, however, is more differentiated, when it comes to lock-in. Research considering the consumer's side particularly focuses on cognition and switching costs. One line of research refers to *cognitive lock-in* to describe the phenomenon (Johnson, Bellman, and Lohse 2003; Murray and Häubl 2007). It found that idiosyncratic learning or "practice" with one provider leads to cognitive costs of switching to another provider. This leads to a form of loyalty that does not "require a positive attitude toward the product, trust in the product, or objectively superior product functionality" (Murray and Häubl, 2007, p. 78). As introduced here, cognitive lock-in is a good candidate for learning and habituation effects in consumer lock-in, particularly in non-contractual agreements and in consumer contexts. Other authors describe such mainly habit based behavior as *behavioral lock-in* (e.g. Maréchal 2010).

Referencing repeat purchase loyalty, Zauberan (2003) defines consumer lock-in as *consumers' decreased propensity to search and switch after an initial investment*. His work examined setup- and usage costs in consumption. He found evidence that initial costs can induce lock-in and anticipation of such lock-in is difficult for individuals. Examining the intertemporal dynamics of the process Zauberan (2003) showed that "[l]ock-in is induced by a preference to minimize immediate costs and a failure to anticipate the impact of future switching costs" (p. 416). His research also refers to the importance of sequencing and idiosyncratic investment with outcome uncertainty and refers to the behavioral dimension of lock-in.

As this short research review shows, there is no unified concept of *consumer lock-in* but rather several approaches to the phenomenon with some signifying features that were mostly motivated by strategic efforts to increase customer loyalty through lock-in. Some of the reviewed lock-in conceptions match elements from path dependence research, with regards to a process perspective and phases; however, rising switching costs may not always be easily observable and aware to the consumer and have a social dimension as well. A dictionary definition of lock-in describes it as follows (Random House 2014):

lock-in [lok-in]

noun

1. an act or instance of becoming unalterable, unmovable, or rigid.
2. commitment, binding, or restriction.

Origin: 1965–70; noun use of verb phrase lock in

When the affected entity of such unalterable commitment is a consumer, one may speak of **consumer lock-in**. The proposition is that some service consumers in

experience discontent and are led into lock-in (Gallini and Karp 1989; Zauberan 2003). The definition provided by Zauberan (2003) is useful, as it identifies the consumer propensity as the focal point of lock-in considerations and leaves room for different reasons for locked in consumer behavior. It is weak however, as it takes in a wide range of behaviors that may not constitute a lock-in as it is understood in path dependence research. Many situations can decrease a search and switching propensity. Lock-in however is more potent than this, due to its intensity leading to a quasi-irreversibility.

Considering the points made in this review, some characterizing features of consumer lock-in conceptions in marketing research are:

- Risky choices, uncertainty
- Development of relationship costs post-choice (switching costs)
- A process based on a sequence of phases
- Cognitive lock-in – learning on consumer side
- Inertia, rigidity of the individual
- Captive loyalty considerations

The definition by Zauberan (2003) and these characteristics work as a starting point for the development of a more constricted definition of consumer lock-in over the course of this section. Based on the individual lock-in conception from path dependence the consideration of the term in marketing will be evaluated. After examining the understanding of consumer decision making in consumer behavior research with regards to locked in behavior, the definition for this work is developed.

2.2.2 The Decision Process and Lock-in as an Outcome in Consumer Behavior

Consumer behavior research is an area of marketing research focused on the consumer as a decision maker and his actions and interactions in marketplaces with providers of goods and services, as well as other consumers. It applies concepts from psychology, particularly in customer *activation* and consumer *cognition*, to explain consumer behavioral phenomena (Foscht and Swoboda 2011). Activation focuses on advertising activities, emotions, motivation and attitudes. Cognitive aspects include the way information is retrieved, accessed and learned.

When considering individuals in a consumption environment, consumer behavior research differentiates between *collective* and *individual* as well as *organizational* and *consumer* decisions (Foscht and Swoboda 2011). Section 2.1 elaborated on research in organizational path dependence it identified *individual cognition* as a gap in path

dependence research. Therefore the focus is now on the properties of *individual consumer behavior* that may result in such individual lock-in and how such lock-in on the *consumer* level can be identified.

On a general level, research with a behavioral focus describes decision making as a process with distinct stages and has done so for over a hundred years (Bruner and Pomazal 1988). Unfolding the cognitive aspects of such decisions in consumption, structural models similarly aim at organizing the process in stages or phases (Foscht and Swoboda 2011).

A detailed model that evolved from this discourse is that of Blackwell, Miniard, and Engel (2001), which was selected as a reference frame for discussing the overlap with the process understanding in individual path dependence. This model, as shown in Figure 6, is intended to illustrate the process in its entirety, as it is comprehended in consumer behavior research today. Due to its complexity it is particularly valid for high-involvement and extensive buying decisions (Foscht and Swoboda 2011).

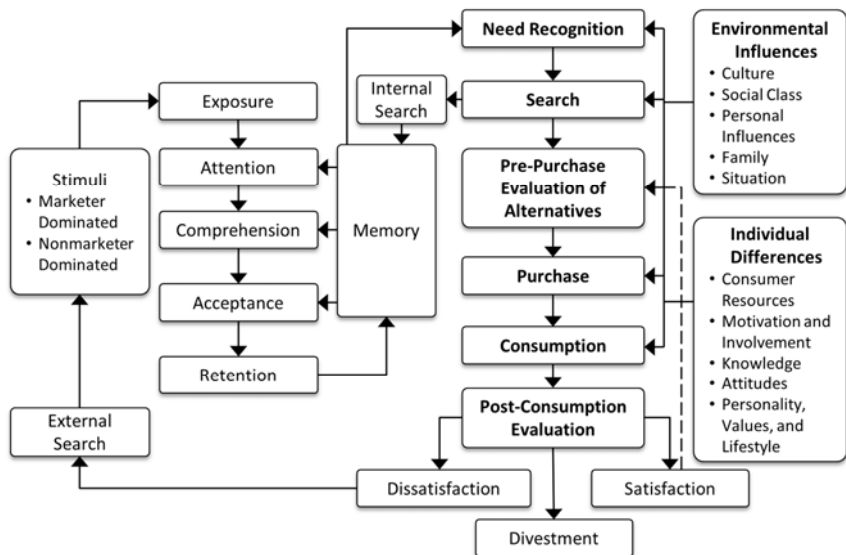


Figure 6: The Consumer Decision Process Model according to Blackwell, Miniard, and Engel (2001), Chapter 3.

The main stages of the process are the **recognition** of a need in the consumer, provoking **search** and **evaluation** of alternatives. The decision then occurs in the **purchase** stage. It is followed by the decision outcome, here described as **consumption** and **post-consumption evaluation**. The process is influenced and

shaped both by **individual** and **environmental** forces. As shown on the left, the cognitive processes of information search and inclusion are differentiated in **internal** and **external search**, including learning from past experience and reaction to marketing stimuli. The proposition of this work is that such a process can end up in lock-in in certain contexts and for some consumers. The decision case in path dependence is one where post-decision processes like experience and evaluations play a central role, as the lock-in mechanisms take time to take effect.

As the model presented by Blackwell, Miniard, and Engel (2001) suggests, there are considerable differences between the stages before and after the purchase decision – a conception in line with the process phases of individual lock-in in this work. To analyze the decision process for consumer lock-in, it is explored in four steps: First, the individual stages preceding the purchase decision are considered for their relevance for consumer persistence (*phase I* in the individual path dependence model).

The post-decision processes are considered as the situation, when evaluation occurs and consumer lock-in develops as a possible outcome (*phase II*). Next, the two main forces influencing the process in its entirety are evaluated: *Environmental influences* and *individual differences* are considered as influencing factors in consumer behavior research, aiming at understanding the process.

2.2.2.1 Consumer Decision Making and Consumer Behavior – A Matter of Context

As understood in the preliminary model, a potential consumer lock-in process starts with a decision in phase I. In the case of consumer decision making, the process starts with *need recognition*, which is characterized as recognizing a discrepancy between a current state and a desired state (Blackwell, Miniard, and Engel 2001). This situation spurs a complex thought process that can cause a need in the consumer to act on this discrepancy (Bruner and Pomazal 1988). In this case it induces *search* processes and *evaluation*, leading up to a final decision in form of a *purchase*. The conception is based in *psychology* that was adapted for *consumer behavior*. It is a decisive phase in the process, as certain decision aspects may promote consumer lock-in as an outcome. Importance of the decision appears as a necessary condition for this outcome; what properties that entails is outlined in the following.

Modern psychological research focuses on dynamic cognitive processes, where individual decisions can be differentiated by the number and extent of choice alternatives, steps in the decision process and whether the decision is a one-time or repeated decision (Jungermann, Pfister, and Fischer 2010). Furthermore, decisions can

be distinguished by the *cognitive effort* involved in the decision regarding *utility* and *preference contingency* considerations, *goal conflicts* and *uncertainty* about outcomes.

It is difficult to describe regularities in human decisions as they are “*highly dependent on problem, context and individual factors*” (Svenson, 1996, p. 252). Considering important decisions, this line of research is particularly interested in irregularities and conflicts in decisions that do not comply with utilitarian predictions (Brehm 1956). According to this understanding, the pre-decision process is governed by differentiation of choices, which is followed by consolidation regarding the chosen course of action to the point of quasi-determinism (Svenson 1992). Differentiation refers to discriminating alternatives to reinforce decision determinacy, while post-decision consolidation refers to an unconscious favorable evaluation of the chosen alternative – a change in attitude that may even contradict past attitudes (Ross, McFarland, and Fletcher 1981).

Applying the described differentiations to the decision initiating a path dependent sequence is straightforward. As described in section 2.1.2, a potentially path dependent decision follows a legacy and thus is always under the influence of decision history, which come to carry over the process beginning with **need recognition**. The determining choice is an important, single step, and exclusive decision with following potential for conflict. There is considerable cognitive effort involved in trying to figure out what’s the best alternative in the decision situation. Uncertainty (e.g. knowledge about which technology will prevail) and risk however, are inevitable due to bounded rationality.

Early on it was identified that consumer behavior is very dependent on situational characteristics (Belk 1975), in this work referred to as *context*. Section 2.1 already outlined that *lock-in* is a phenomenon limited to certain contexts, which are now examined for consumer behavior.

	High involvement	Low involvement
Significant differences between brands	Complex buying behavior	Variety-seeking buying behavior
Few differences between brands	Dissonance reducing buying behavior	Habitual buying behavior

Table 6: Four Types of Buying Behavior according to Kotler and Armstrong (2004), p. 197.

The consumer behavior perspective on decisions utilizes the described psychological concepts. In line with this understanding, consumer behavior describes cases of important decisions with an associated complex decision as *complex buying behavior*. This work identifies high potential for individual path dependence in such decisions.

Table 6 differentiates this type of buying behavior from other types of behavior by necessary search effort and individual importance though involvement.

The described level of involvement is another central concept in consumer decision behavior. It reflects individually perceived importance and differentiates mundane decisions from individually relevant and important decisions (Zaichkowsky 1985). *Complex buying behavior* is categorized as a situation of high involvement with significant differences between brands, i.e. choice alternatives (Kotler and Armstrong 2004). It is termed as a case of *risky, expensive and infrequently* purchased products and differentiated from habitual, variety seeking and dissonance reducing buying behavior. Another concept describing this type of decision with increased risk and high individual motivation is *extended problem solving* (EPS), in contrast to *limited problem solving* (LPS) (Blackwell, Miniard, and Engel 2001). These examples match the description of lock-in conceptions from path dependence, which leads to the conclusion that the decision case this work is interested in can be described as a situation of *complex buying behavior* with *extended problem solving* and high *cognitive effort* that is *risky* and high in individual *involvement*.

The type of high-involvement and complex decisions in the focus of this work entail constant and external information search and retrieval as well as reliance on reference groups (see Section 2.2.2.1) and may just entail latent need recognition (Bruner and Pomazal 1988). Recognition depends on the type of need, so definition of this stage remains an assumption; usually potential consumers are identifiable for a provider when they enter the **search stage**.

Consumer search can occur *internally* and *externally*. Internal search considers individual experience and knowledge, while external search means collecting information from peers or the marketplace. Despite consumers' search efforts, information about the actual price and consequences of their decisions is often poor, not only in important decisions (Nelson 1970). In these decisions, *search properties* – properties that consumers are able to evaluate before the decision – may only have limited value and in order to evaluate the quality of a product. Rather, experience is necessary to be able to evaluate a product fully, which can only be gained after a purchase. The author postulates that in the case of such *experience goods*, building of a monopoly is more likely and recommendations play a greater role in evaluation of choices.

Darby and Karni (1973) extend this dichotomy by the element of *credence properties*, a dimension that even experience with a product does not help evaluate but that is also

relevant for decisions – particularly when a path develops. It leads to consequence uncertainty and also procedural uncertainty, which were found to cause delays in decision making (Greenleaf and Lehmann 1995).

The inherent risk in decision situations lead to a use of heuristics to make a decision (Bettman and Johnson 1991) in the **pre-purchase evaluation of alternatives** stage. This conception contrasts the rational decision making perspective considered in classic utility theory and suggests a “*gamble*” situation in the economic sense. As Svenson (1992) puts it, the individual differentiates the alternatives until one choice is sufficiently distinguished to be robust to potential preference reversal after a decision.

Research aimed at explaining such decisions and the behavior in such processes has moved away from trying to understand decisions based on rationality (Simon 1955, 1959, 1972). This shift in view is also reflected in path dependence research – limited rationality is a recurring theme and foundation here (see Section 2.1). Simon (1955) identified *bounded rationality* as a more realistic model of decision behavior, also citing *dissonance theory* from psychology.

Instead of optimality, deciders in this conception strive for a satisfactory outcome, due to risk and uncertainty, incomplete information about alternatives, and decision complexity. That is because important decisions cannot be delayed forever and search may never eliminate uncertainty. *Prospect theory* similarly suggests that depending on individual risk aversion, individuals rely on heuristics to make such choices (Kahneman and Tversky 1979; Tversky and Kahneman 1974).

Nevertheless consumers form *expectations* about the outcome of a decision – particularly in services (Douglas and Connor 2003). These are informed by the consumer’s history and are also expected to influence perceived switching costs (Burnham, Frels, and Mahajan 2003). They must be considered as an overarching factor in consideration of the evaluation of service quality, satisfaction, and the mechanisms supporting consumer lock-in. The experience of dissonance and unfavorable expectation evaluation however is expected to be an idiosyncratic phenomenon limited to some consumers and with an individual set of mechanisms reinforcing the lock-in for different individuals.

The decision stage – or **purchase** – entails the exclusive choice following from the extensive consideration process, based on an idiosyncratic set of reasons or heuristics. From this choice follows a set of consequences depending on the type of decision. Summarizing the mentioned features of decision-making in consumers, the following aspects of decisions make commencing a process ending in lock-in likely:

- Important, complex, single step decision
 - Outcome uncertainty
 - High investment (risk)
 - High involvement
 - Considerable differences between alternatives
- Consolidation in extensive post-decision processes

These aspects of consumer decisions and the following process make a case for decisions in services markets, as did the examples given with regards to individual path dependence and consumer lock-in. Differences in search between goods and services have been identified (McCullough and Gremler 1999): Services are perceived as riskier because outcome uncertainty is higher.

In many cases, only experience of the service enables individual evaluation, as production and consumption occur simultaneously. Thus effort invested in internal and external search will be higher to try and reduce this risk. Similarly Parasuraman, Zeithaml, and Berry (1985) postulate that most services contain few *search properties*. This makes their quality more difficult to evaluate than that of goods, leading to uncertainty in the decision situation. C. Grönroos (2006) supports this notion, saying that “*the only aspect of services that clearly distinguishes them from physical goods is their process nature*” (p. 319). Which services are suitable for lock-in consideration will be discussed more closely in Section 2.3.4.

The presented points make a strong case for decisions in consumer services market contexts with high investments as a research subject. Since services entail extensive post-purchase processes and the path dependence model also focuses on these in *phases II and III* of the model, these are elaborated with respect to consumer cognition in the following sections.

2.2.2.2 Post-Decision Processes – Satisfaction, Commitment, and Cognitive Dissonance

Generally the idea of consumption from a consumer perspective is receiving something that benefits the individual more than the costs incurred in the process. This is one of the premises of the concept of utility and transaction costs: The individual accounts for benefit and cost and trades them off in a consumption decision to reach the highest net-benefit. According to this naïve theory, consumers in buyer markets select the best from available alternatives and terminate consumption processes that fail to deliver benefit or render satisfaction.

Once the purchase – a consumption decision under uncertainty – is made, **consumption** and **post-consumption evaluation** begin – the consumer engages in *post-decision processes* (Blackwell, Miniard, and Engel 2001). According to the model derived from path dependence research, *phase II* is entered. Some cases, as described in the previous section, initiate mechanisms in this phase that entrench the individual with a potential tipping point that may end them in lock-in. As introduced, services likely induce these mechanisms as the purchase entails entry into an uncertain process, where consumption and evaluation coincide and progress idiosyncratically. Psychologically, these post decision processes are subject to bias (Festinger 1964). The focus of this section is on identifying relevant dimensions of evaluation that serve as an identifier of *cognitive dissonance* as an antecedent of lock-in.

The model by Blackwell, Miniard, and Engel (2001) prominently incorporates *consumer satisfaction* in this stage. Much of the strategic marketing in providers aims at increasing consumer satisfaction to motivate repurchase, making it one of the central determinants in marketing research. It is often considered as an indicator of performance perceptions, depending on perceived quality, expectations, and disconfirmation (Anderson 1973). In line with the reasoning in the previous section Anderson (1973) writes: “*Disconfirmation of expectations for products for which consumers make deep personal and financial commitments may have substantially different effects on consumer perceptions of performance than less personal, lower cost, and less ego-related goods*” (p. 44), making a case for higher sunk and fixed costs, increasing the importance of satisfaction. Defection despite satisfaction however is also dependent on provider action and context (T. O. Jones and Sasser 1995).

Oliver (2010) wrote extensively on the satisfaction concept in consumer behavior and its connection to commitment and loyalty. He describes the cycle of satisfaction-based loyalty, where higher stages of loyalty are reached with repeated experience and satisfaction (p. 426). This lead to the assumption that satisfaction is an antecedent of loyalty and commitment (Bearden and Teel 1983). Loyalty – *continued purposeful interaction* – however can also develop in the absence of satisfaction and potentially even in absence of attitudinal commitment (Pritchard, Havitz, and Howard 1999).

Oliver (2010) refers to lock-in in a section on cognitive loyalty and describes lock-in as “*apparent loyalty when encountering very low levels of satisfaction (dissatisfaction)*” (p. 437). He delineates this situation from the expected relationship of low satisfaction leading to low loyalty and vice versa and also the case of low

loyalty despite high satisfaction, which he explains through the attractiveness of alternatives. Table 7 shows the possible combinations.

	High Satisfaction	Low Satisfaction
High Loyalty	Expected Relationship	Captive loyalty (Lock-in)
Low Loyalty	Cognitive Loyalty	Expected Relationship

Table 7: Satisfaction-Loyalty Relationship, based on Oliver (2010).

He continues providing three triggers of such lock-in: *Supply monopoly* like in razor blade type markets, *interpersonal loyalty to provider employees* or salespeople and *exchange specific assets* like *sunk costs* and *consumer learning and familiarity*. He also describes the “*fear of the unknown*” that switching to another provider may entail, leading to *captive loyalty*. This is a context factor as it depends on the decision situation and is taken into consideration in the condition of *decision uncertainty* for individual lock-in as an outcome. It is closely related to the mentioned risks: *functional, physical, financial, social* and *psychological risks* all contribute to switching costs (Karakaya 2000).

Another example Oliver (2010) provides is that of loyalty programs, which are built on lock-in principles. His examples coincide with the lock-in mechanisms identified for individual lock-in, citing them as “*sometimes measured as perceived switching costs*” (Oliver, 2010, p. 452). Table 8 provides an overview of the relevant barriers on each level and the self-reinforcing mechanisms that can directly be associated with them.

Level	Barrier	Associated self-reinforcing mechanisms
Individual	Perceived switching- and sunk costs	Large set-up or fixed costs, Learning effects
	Consumer learning/habituation	
Social	Familiarity	Coordination effects, Complementarity Effects
	Interpersonal relationships	

Table 8: Categorization of Barriers identified by Oliver (2010), regarding respective Reinforcement Mechanism and affected Level of individual lock-in.

While a supply monopoly is more likely in goods-markets, the other examples provided are common in services markets. As introduced before, research in this area also coined the term *captive loyalty*, describing “*behavioral loyalty based on high barriers to exit*” (Patterson and Smith, 2003, p. 116). The switching costs, particularly relational barriers, examined here were found to affect the individual propensity to stay with a service provider. Section 2.3.3 summarizes this study and related research in examining switching costs as lock-in mechanisms.

In line with the process consideration introduced earlier, relational exchange between service providers and buyers has also adopted a process view (Dwyer, Schurr, and Oh

1987), focusing on the development and relational dynamics of the *exchange relationship phases* rather than distinct transactions (Czepiel 1990). Continuous-/long-term services are particularly interesting for process and relationship considerations, with early stages determining the relationship duration, i.e. decision to exit the relationship (Bolton 1998). Research identifies *commitment* as central for consumer retention (Morgan and Hunt 1994; Rese 2003) and defines it as “*an enduring desire to continue an attachment*” (Pritchard, Havitz, and Howard 1999). Dwyer, Schurr, and Oh (1987) see commitment as the desired and most advanced phase of relationships, when satisfaction and inputs in the relationship are high. In this phase it becomes durable and has reached a level of consistency. Commitment, trust, and loyalty are connected evaluative aspects examined in research with a focus on consumers and their persistence in *service relationships* (Morgan and Hunt 1994; Sirdeshmukh, Singh, and Sabol 2002). These aspects develop over the relationship process, in conjunction with experience and evaluation of a service, so high levels of commitment in a case of low satisfaction might signify lock-in in late phases of the process. Dissonance reduction however might lead to a different outcome in a case of lock-in.

As introduced, the concept of lock-in implies a condition where the commitment to a provider is constraint-based for some service consumers. Furthermore, lock-in implies quasi inefficiency and quasi irreversibility. In the types of services relevant for this work, satisfaction and commitment develop over the course of the consumption process. It can be described as a flanking evaluation process – the service needs to be experienced in order to evaluate it – which is best described as evaluation of the service encounter, affecting behavioral intentions (Bitner 1990). A lasting unfavorable evaluation may be a cognitive antecedent of lock-in, signaling individual quasi-inefficiency. Research proposes a negative relation between commitment and switching intentions (e.g. Bansal, Irving, and Taylor 2004).

Unfavorable evaluation of an experience is reflected in the satisfaction and commitment evaluations of a service, particularly in early stages. Based on Oliver (2010), one may argue that a situation of persistence in the consumption process while encountering low satisfaction or a phase of low commitment can cause *cognitive dissonance*. He defines *cognitive dissonance* for the satisfaction context as a “*state of psychological discomfort, tension, or anxiety brought about by uncertainty over the outcomes of a decision; an apprehension. Usually a postchoice and preusage condition, but may exist during consumption of events that are prolonged over a period of time (e.g. a vacation) so that future performance is as yet unknown*” (Oliver, 2010, p. 22) and stipulates that while regret and cognitive dissonance are closely

linked, relatively few studies have considered them and their interaction with satisfaction.

Dissonance theory is employed in consumer behavior to describe such post purchase behaviors. *Cognitive dissonance* is caused by the “psychological discomfort” of inconsistent experience with initial expectations (Anderson, Fornell, and Rust 1997). Such a situation may occur for individuals that “lost” in the gamble – the decision made under uncertainty turns out different than expected. Cognitive dissonance reduction is a way to alleviate this experienced cognitive dissonance. There are two ways to reduce the cognitive dissonance between a negative evaluation of a service and the persistence in a service:

1. Exiting/switching the consumption process and retaining attitudes.
2. Remaining in the choice consequences and changing attitudes.

Research identified exiting/switching as an attempt for cognitive dissonance reduction, which however in itself may entail cognitive dissonance due to risk (Karakaya 2000). In this case a potential lock-in would be averted, which may not be in the interest of providers of goods and services, who strive for increases of consumer loyalty that is related to increased profits. If cognitive dissonance regarding maintenance of the relationship occurs over the course of the service relationship, which cannot be alleviated by exiting the relationship, the consumer is left in cognitive dissonance (Festinger 1962).

In the second option, this dissonance is reduced by justification and *rationalization* – a change in attitude (Dubé, Hitsch, and Rossi 2009). Most studies in consumer behavior focused on attitude changes as a result of conclusions from dissonance theory (Cummings and Venkatesan 1976). Individual lock-in may be signified by this way of cognitive dissonance reduction as Frank (2007) stated. Facilitated by the barriers raised in using the process and experiencing costs, consumer lock-in on the cognitive level may occur (Murray and Häubl 2007). Research has shown such effects due to learning in online environments (Johnson, Bellman, and Lohse 2003). Zauberan (2003) similarly refers to the potential of cognitive costs for a reduced tendency to affect switching behavior. Bloch and Richins (1983) describe that perceived importance also positively affects the tendency to experience cognitive dissonance and to pursue dissonance reduction.

These respects support the notion that switching barriers like those incurred in services lead to consumer lock-in in continuous consumption processes. Examples for such service relationships include *legal services*, *management consulting* and *medical*

services (de Ruyter, Wetzels, and Bloemer 1998). These barriers lead consumers to reduce their cognitive dissonance by adapting their expectation and evaluation, rather than acting on negative evaluations.

One study by Salzberger and Koller (2010) looked at the connection of two dimensions of dissonance and satisfaction in a longitudinal design for goods. They found a significant negative relationship between the constructs both at the time of purchase and after the purchase, whereas the satisfaction-loyalty link was positive as expected. While the researchers employed separate scales for the dissonance and satisfaction, the negative connection suggests the closeness of evaluative qualities of dissonance.

Considering that consumers in *phase II* of the individual lock-in process are still open in their evaluations and potential for switching, *phase III* can be distinguished in that here the evaluations may improve due to cognitive dissonance reduction. As the previous section showed, service consumption processes make a strong case for the importance of in-process experience due to their nature. Section 2.3 elaborates on the process and the mechanisms of lock-in that work counter to the rationale of exiting a consumption process to reduce cognitive dissonance, focusing explicitly on service relationships.

2.2.2.3 Environmental Influences in Decision Making and Consumption

This section focuses on the social character of consumption and it is useful to differentiate here between the decision stage (*phase I*) and the consumption stage (*phases II and III*), because the realm of social influence and interaction differs between these two stages. The described aggregate influences are considered as more relevant for the decision level, when direct interaction is limited. They are also topic of Section 2.2.2.4, where they are considered as antecedents of individual differences and characteristics. This work, however, is more interested in direct interaction and the relevance of social influence on situational individual behavior in the consumption process.

The importance of context in consumer decisions was already outlined in Section 2.2.2.1. When trying to understand individual behavior, researchers from the economic discipline and psychology have identified the particular relevance of the *social level*. The entire discipline of sociology is dedicated to understanding social behavior and has commented on and helped advance works in economics. Both sociology and psychology have been good resources for the economic and marketing disciplines to

draw from, because the applied models of behavior failed to predict observed individual level behavior. The understanding of the basic interactional level however is far from unified or conclusive – both within and in between disciplines.

The work of Granovetter (1985) on social embeddedness transcends economics and economic sociology alike (Carruthers 1997). Referring to social theory, Granovetter makes a point that *economic action is embedded in non-economic relationships*. He goes on to illustrate his conception with organizational decisions between hierarchical or market transactions, but his idea of a social level of economic behavior in market societies refers to the individual as a decision maker, influenced by the environment. Granovetter (1985) criticizes how classical and neoclassical economics have removed the social level from their conception of human action and states that “*increased attention to the micro-level details of imperfectly competitive markets, characterized by small numbers of participants with sunk costs and "specific human capital" investments*” eroded confidence in this conception (p. 488). Consumer behavior thus focuses on this level of influence to explain decisions and behavior.

Environmental influences on the consumption process involve direct and indirect interaction with the environment of the individual consumer that can affect every stage of the decision process in different ways. Blackwell, Miniard, and Engel (2001) describe the relevance of such environmental influences, differentiating between *culture, social class, personal influences, family, and situation*. Research interested in aggregate consumption patterns and general perceptions often focuses on discriminant values like culture, class and family backgrounds – one prominent example being research around consumer culture theory (Arnould and Thompson 2005). In line with the path dependence conception, it can be argued that the aggregate level environmental forces mentioned are important for consumer behavior. Interdependence is important for adoption processes and also explain changes in consumption behavior (e.g. Cowan, Cowan, and Swann 1997).

The concepts of social influence in *decision making* range from *word of mouth referrals* (WOM) and *tie strength* (Brown and Reingen 1987), *reference group heuristics* (Frenzen and Nakamoto 1993; Hayakawa and Venieris 1977), *market mavenism* (Price, Feick, and Guskey 1995) and *consumer conformity* (Lascu and Zinkhan 1999) – they are subsumed under external search in *phase I*. Reaching a decision is socially influenced, particularly in important and complex decisions. Individuals vary in their susceptibility for such influence (Bearden, Netemeyer, and Teel 1989). How this influence works however is both context dependent and

idiosyncratic (Belk 1975), but it plays an important role in decision making and behavior.

Environmental influence in decision making can be distinguished from social influence *post-decision* – including the potential for external search in this situation. As introduced in Section 2.1.4, lock-in mechanisms on the social level refer to *direct social influence*. It needs to be considered however that the direct social influence level is very context dependent and thus the influence of such mechanisms depends on the actual level of interaction. *Interdependence* in consumption is the conception that events and actions are always related to their surrounding and reciprocally dependent (e.g. Cowan, Cowan, and Swann, 2004; Hayakawa and Venieris, 1977; Yang and Allenby, 2003). On the aggregate level, this is described as *network effects*, where next to intrinsic individual interest, user population determines individual adoption. In service consumption processes, the most apparent forms of such interdependence and interaction are with two groups (Woisetschläger, Lentz, and Evanschitzky 2011):

- The provider personnel.
- Other consumers.

If the perception of such interactions in service settings are positive, they are assumed to affect loyalty – a situation that has also been described as consumer comfort (Spake and Beatty 2003). *Customer to customer interaction* in the servicescape is the subject of research by Grove and Fisk (1997), who found that other customers can have tremendous positive as well as negative impact on individual service experience and need to be managed accordingly. They also found these effects to depend on individual characteristics, with larger differences between customers bearing higher potential for dissatisfaction.

Considering *interaction with provider personnel* in this context, Oliver (2010) extends to the aspect of interpersonal loyalty in services, as mentioned in the previous section. He states that this type of loyalty is particularly important in this area due to the strong interpersonal component of services that need to be considered, but he acknowledges that little research has considered this dimension. Patterson and Ward (2000) connect them to search features and switching barriers and show that they increase the desire for continued patronage – a relationship – and potentially captive loyalty. Here, negative interaction is possible as well and can have the opposite effect on quality perception and loyalty, making *service recovery* necessary (Berry and Parasuraman 1991).

The described interactions on the social level can take the form of self-reinforcing mechanisms, as social processes require coordination, imply complementarity regarding the consumed good, and influence future expectations regarding interactions. Section 2.3 focuses more closely on the relational dimension when considering social switching costs as social level lock-in mechanisms in service relationships.

2.2.2.4 Individual Differences – Character as an Idiosyncratic Condition

One particular focus of this work is individual perception and experience – how individuals decide for a consumption offering, enter a consumption process and potentially become locked in. One logical aspect to be considered in this context are individual differences because they may explain part of the lock-in phenomenon, as implied by Klemperer (1987). The majority of path dependence research focuses on the aggregate, as was presented in Section 2.1.1. Therefore, when considering the influence of the individual differences on the process of individual path dependence, there is little previous research to draw from. Reflecting on individual differences in the consumer decision-making process however, differences play a role in consumption decisions and influence the individual outcome of consumption processes.

Some of the individual differences mentioned by Blackwell, Miniard, and Engel (2001), like *values and lifestyle*, are connected to the environmental influences in the form of social aspects as they were mentioned in the previous section: culture, social class and situation can be subsumed under the *history matters* premise of path dependence. They determine where the individual decider is at the moment of the decision, his outlook and personality. Personality, which is described as *consistent responses to environmental stimuli* (Blackwell, Miniard, and Engel 2001), is a central aspect considered in a consumption context that may also explain a tendency for individual path dependence. An individual's personality can be inquired through measurement of characteristics by self-description, which can be done based on the big five personality domains (Gosling, Rentfrow, and Swann 2003).

Other individual differences are more idiosyncratic and depend on psychological qualities that are important in the decision situation but also following the decision. *Involvement* was already mentioned in Section 2.2.2.1 and differs not only depending on the type of decision but also individually – next to the physical and situational, there is a personal dimension to the involvement construct (Zaichkowsky 1985).

Others include *individual motivation, resources, knowledge and attitudes*. These greatly affect the individual search behavior and the individual tendency to reach a decision.

Individual differences are a central factor in this work, as it aims at explaining individual behavior in the process of lock-in. Here the *individual idiosyncrasies* in a consumption process are of interest, which were also identified as a potential obstacle to loyalty by Oliver (2010). When individuals in a service relationship are dissatisfied or feel like they made a bad choice, the influence of barriers to exiting the relationship depends on individual characteristics, preferences and expectations. As Bendapudi and Berry (1997) put it, “*relationship maintenance may be a function of [a customer’s] idiosyncratic characteristics*” (p. 24). Customer characteristics like demographics as well as stable individual preferences were found to moderate the relationship between satisfaction and loyalty (Mittal and Kamakura 2001).

Section 2.2.1 mentioned individual inertia as one explanation for consumer lock-in, which may also be a character trait. Patterson and Ward (2000) mentioned for service relationships, that there is a positive correlation between age and the tendency to form a relationship, while gender has no influence. Interestingly, it was found that 30% of consumers do not appear to form strong relationships at all. Individual differences may also determine the importance the consumer attributes to aspects of the lock-in process – individual proneness to respond more to social- or individual level mechanisms or lock-in. Furthermore, it determines individual tendency to act consistent with self-perception and beliefs (Bem 1967). Individual differences thus determine, next to context, a consumer lock-in outcome.

In summary, it can be assumed that there is variation in individual decision-making and perceptions and attitudes with regards to the consumption process depending on personality and characteristics of the individual. Patterson and Ward (2000) conclude the same for service relationships, where each person has their own set of criteria for relationship development and evaluation. In this work this aspect may be considered as one aspect influencing individual tendency for lock-in; however differences between individuals are not a central question of this work. They can nonetheless be considered an antecedent when comparing individuals identified as locked in and individuals who were not identified as locked in in the path dependent understanding.

2.2.3 Summary of Consumer Lock-in in Consumer Behavior and Research Propositions

The goal of this section was unfolding the view and understanding of the phenomenon of consumer lock-in in consumer behavior research and constructing the process of individual lock-in, inspired by a path dependence understanding of such a process.

Consumer lock-in is used in marketing and economics research somewhat divergent from the lock-in conception in path dependence research, while overlapping with regards to the understanding of the decision situation and the general notion of the outcome. This correspondence with the understanding of individual lock-in derived from path dependence research in Section 2.1 enables the notion that some consumer decisions induce lock-in mechanisms that increase to a point of quasi irreversibility – these mechanisms are here referred to as *switching barriers* or *switching costs*.

The section went on to elaborate the consumer decision process in complex buying behavior, dividing it in accordance with the phase conception. Such decisions are well understood in consumer behavior research, with outcome uncertainty making experience and evaluation of an offering necessary. A case was made that services are particularly interesting, due to the equivocal nature of the value proposition and actual value outcome. This uncertainty makes evaluation after the decision necessary, which in the case of services is also the process of consumption.

Phase I starts with the recognition of a need that motivates the individual to engage in search processes and consideration of alternatives. A consumption decision with the potential for consumer lock-in as an outcome has the following distinct features:

- It is complex, exclusive and inherently limited in choice.
- It exhibits features of *experience goods*, where the (individually perceived) fit or quality of the offering can only be assessed during/after the experience, i.e. it entails outcome uncertainty.
- It requires a high and continuous investment over a process.

This lead to the next proposition, which aims at the first stage of the consumer lock-in process and answers the second research question:

Proposition 2.1: Consumer lock-in to a consumption process is likely with complex consumption decisions that are individually important, entail outcome uncertainty, and require exclusive, considerable, and ongoing investment from the consumer.

This proposition was derived from the previous work on consumer lock-in as presented in Section 2.2.1. Some service categories are likely to fit these specifications, so the next section focuses more closely on service relationships. Expectations are developed regarding the service and a decision is reached based on *individual characteristics* and influenced by the individual's *environment* from at least two alternatives.

Phase II is entered – consumption and evaluation commences. Satisfaction and commitment are two evaluative dimensions that may make a phase of cognitive dissonance in service consumption visible. In case of persistence in the process this dissonance is a possible antecedent of consumer lock-in. The next proposition focuses on this phase:

Proposition 2.2: In consumption processes, individuals engage in an evaluative process which – depending on individual characteristics and perception of fit – can result in cognitive dissonance.

Cognitive dissonance reduction can be achieved in this case by a change in attitude. It is indicated by a phase of negative evaluation of the process. Consumer lock-in as a possible outcome of a negative evaluation without dissonance reduction by switching or exiting is not that well understood, particularly on the individual behavioral and cognitive level. While conceptions exist that explain individual behavior that goes against the intuition of decision revision, it has not been conceptualized in the view of a comprehensive process model.

These propositions show that the potential for individual lock-in may depend on aspects of the decision context and aspects regarding the individual. This dichotomy is supported by research on consumer complaint behavior that found *situational factors* and *personal factors* as antecedents of the complaint process (Stephens and Gwinner 1998). *Lock-in* was introduced as a core element and outcome of a path dependent process, when entering *phase III*. This type of lock-in to a choice path arises due to historical events and is described as an *absence of flexibility in switching to available alternatives* (Arthur 1989). The initial decision (i.e. the process understanding), the following evaluation (i.e. entrenchment) and lock-in mechanisms (i.e. rising switching costs and investment) and the resulting lock-in have been inquired, but a definition capturing the understanding of this work is still necessary.

The general understanding is that the affected entity becomes rigid with lock-in being a commitment, binding or restriction. The previously presented definition of *consumer lock-in* by Zauberman (2003) refers to the phenomenon as *consumers' decreased*

propensity to search and switch after an initial investment. This definition, along with the conception of individual lock-in in path dependence research, serves as a starting point for the assessment of the properties of consumer lock-in for important decisions in a consumption context. Zauberman (2003) describes how sunk and ongoing costs lead to a decrease in switching propensity in absence of commitment. While his definition supports the general idea of lock-in due to consumer switching barriers, it lacks detail and falls short with regard to the relational dimension of the process of becoming locked-in. A more detailed differentiation of mechanisms causing the lock-in is necessary. Furthermore, while all consumers encounter the sunk costs and ongoing idiosyncratic investment in a service, decreasing their propensity to switch (Arkes and Blumer 1985), lock-in is stronger as it implies a cognitive incapability to switch despite experienced lack of service fit along one or more dimensions.

Combined with the mechanisms locking in the consumer, this leads to the definition of consumer lock-in for this work from a consumer behavior perspective:

Consumer lock-in is a situation of potentially unaware inability to switch from or exit a consumption process due to entrenchment with increasing barriers on the individual and/or social level.

Conferring with the path dependence research presented, the barriers stand for the lock-in mechanisms. The increasing logic is in line with the understanding of a creeping increase in switching costs that inhibits individual flexibility (Rese 2003).

The phenomenon is potentially unaware, as consumers evaluate the course under influence of these barriers, given available information. It is thus not likely experienced as a lock-in by the affected individual. As introduced earlier, “[a]t each stage an optimal choice is made under conditions of certainty, so there is no conventional inefficiency. But there may exist regret” (Arthur, 1988). This regret can indicate consumer lock-in, while cognitive dissonance regarding the path is reduced when lock-in occurs. Rather, the effects of rationalization and justification may make individuals in *phase III* feel like they made the right choice. The experience of lock-in only occurs to a consumer when he desires to switch a provider or exit a relationship.

In line with the propositions, the process depends on environmental influences and individual differences, properties and nature of the service and uncertainty in the decision situation. These aspects can be summarized as *context* and *individual characteristics*. Depending on these, the described barriers grow over a sequence of action up until the individual decision is influenced to the point of quasi-determinism. As mentioned before, these barriers are the individually incurred switching costs,

which can culminate in lock-in if they become “*prohibitively expensive*” (Shapiro and Varian, 1999, p. 132). They may lead consumers to stay in a service relationship that doesn’t meet their expectations and that they are not satisfied with (Bolton, 1998), for which they lack commitment (Fullerton 2003), or the decision for which they regret (Tsiros and Mittal 2000).

This section culminated in a focus on unfavorable outcomes of consumption processes in *service environments* as it uncovered the potential for consumer lock-in in service relationships. The developed definition describes lock-in outcome, but the way into consumer lock-in in services can be better understood in terms of the way there – the process and mechanisms. The next section considers services research concerning the strategic angle, the mechanisms outlined here and the potential for consumer lock-in in service relationships. The goal is illuminating *phase II* of the process, the relational side, and the lock-in mechanisms in this particular context.

2.3 The Post-Decision Process in Service Relationships

This section starts with an outline of marketing research on relationships and the *consumer participation* in the production and consumption process. This idea of simultaneous production and consumption in services were joined in the term co-creation. As some services require consumers to make a sequential commitment to an organization in order to receive the service’s benefit – they enter a long-term/continuous *service relationship*. This is particularly relevant with regards to *phase II* of the individual lock-in process and the importance of the relational elements – the social level mechanisms.

Consumer bonding strategies are important in considering these mechanisms in long-term service relationships and are outlined in Section 2.3.2. Prominently, research focuses on the managerial implications of bonding in service relationships, so strategic arguments are prevalent in this section. Assuring customer *retention* and *loyalty* is important in this process for providers. These are linked to service quality and customer satisfaction, but also bonding – particularly in absence of satisfaction or in highly competitive markets.

From a consumer perspective, these strategies raise the barriers described for consumer lock-in, which are here understood in terms of switching costs. Section 2.3.3 summarizes the consumer side of these costs more closely and connects them to the individual lock-in mechanisms. The identification and distinction of the development

of such costs is an important contribution to the theoretical model development for this work.

Considering the applicability of the model, Section 2.3.4 provides a disambiguation of types of services aimed at identifying service features that lend themselves for an empirical analysis regarding consumer lock-in as an outcome. Next to the relational aspects of service delivery, demand and customization may influence this potential. Some real-world examples for such services are drawn from research.

The final section provides a summary of the findings and derives the implications and final propositions for the theoretical model development, which follows in the next chapter.

2.3.1 On Relationship Marketing and Management

As proposed in Section 2.2, *consumer lock-in* is more likely to occur in decision situations that are important, complex and entail certain stakes. It was stated that such decisions are particular to services that entail ongoing and exclusive investment of resources in one alternative. Here, the relational elements can be interpreted as social level lock-in mechanisms. Service marketing- and service relationship research have gone a long way in elaborating on the process of creation and consumption in services and the interaction between consumer and firm. This section elaborates on how research describes the process that follows consumer decisions in such cases: a *service relationship*.

The provision of services generally differs from that of goods in that services are *inseparable* in production and consumption, have more *intangible* than tangible elements, are *perishable* and *heterogeneous* (Shostack 1977). What is more, services constitute the largest share of the worlds' economy and thus marketing in the services field and research on this matter are growing in importance (e.g. Zeithaml, Bitner, and Gremler, 2006).

A consumer decision is the starting point of a consumption process. In the case of services, it entails *commitment* to this service as provisioned and the process connected to this service, either until a certain goal is reached or – in the case of continuous services – until one party exits the relationship (Bolton 1998). Such a process goes beyond repeat purchasing and research in this field provides conditions delineating what constitutes such *service relationships*.

Relationship marketing research started in the mid-80s, describing the shift from *transactions* to *consumer relationships* as a basis of exchange, also implying a shift to

a consumer-centric perspective (Bruhn 2009). A relationship definition of marketing is offered by Gronroos (1990), a central contributor on service relationships:

Marketing is to establish, maintain, enhance and commercialize customer relationships (often but not necessarily always long term relationships) so that the objectives of the parties involved are met. This is done by a mutual exchange and fulfillment of promises.

The consumer side of such a relationship process is in the center of attention in this work. It thus focuses on the elaborations on the consumer side of this buyer-seller relationship, which is differentiated into psychological and behavioral effects (Bruhn 2009). Gronroos (1990) elaborates on the differences of a relationship approach to marketing in service contexts. Three aspects of his elaboration are particularly relevant:

1. The notion that maintaining a relationship and keeping promises to meet the objectives of customers is an objective of marketing activity. Better understanding of the consumer is paramount to reach this objective, which supports the relevance of better understanding the consumer side process.
2. The significance of social contacts and buyer-seller interaction in the form of interactive processes – *interactive marketing*. These processes need to consider “*every production resource used and every stage in the service production and delivery process*” (pp. 6-7).
3. The importance of a long-term orientation with regards to continuous and enduring service relationships. This indicates that marketing activity aims at different stages of a relationship and that each stage differs in nature, depending on “*how far the customer relationships have developed*” (Gronroos, 1990, p. 6).

The first point refers to the customer as a central variable in consideration in marketing. Section 2.2 provided an extensive review of consumer behavior research with regards to the decision process. Relationship marketing connects to this research and the stages of the process with the notion of “*promises*” (Bitner 1995). In order to build relationships, the consumer decision needs to be influenced by *making* promises, then the made promises need to be *enabled* by giving service employees the delivery resources, and finally, the promises need to be *kept*. The latter elements – enabling-, and keeping promises – refer to *internal* and *interactive marketing* over the course of the relationship process. Central here is the assurance of *service quality* as an objective, which is linked to consumer expectations and therefore also to *satisfaction* and *loyalty* (Parasuraman, Zeithaml, and Berry 1985b, 1988). The research stresses the

importance of service encounters in consumer judgment, which also refers to the interactive component of services. Furthermore, Hui and Bateson (1991) point out the importance of consumer control in service encounters regarding its effect on pleasure and desire to stay.

The second point refers to a shift in the view of consumers as receivers of a service to that of a *participant*, who can influence many aspects of the service delivery, interact with employees and develop commitment to a provider (Grönroos, 1978). This argument aligns with the idea of value creation through *interaction*, as promoted in works by Prahalad and Ramaswamy (2000, 2004a, 2004b). The authors suggest a change in focus for managers, encouraging dialogue and negotiation. This change in understanding of the customer role is also captured in research on customer participation and service co-creation (Bitner et al. 1997). Customer participation is described as the “*customers’ mental, physical, and emotional inputs*” into service production and delivery (Rodie and Kleine, 2000, p.111).

Vargo and Lusch (2004, 2008) even suggest moves to apply the different view on services and their characteristics back to goods markets. Some refer to this view as a paradigm shift (Moeller 2008), while others see the contribution more critical (Grönroos 2006, 2008, 2012). It can be argued however that its introduction sparked a conversation about shifting foundational views that were held in the research community for a long time. Interaction and the relational elements of services are considered to be of particular importance in assuring product differentiation, service quality, and customer retention.

	Credence Properties	Experience Properties
High Degree of Interpersonal Contact	e.g. Medical Services (GP only)	e.g. Hairdressing
Low Degree of Interpersonal Contact	e.g. Car Servicing	e.g. Travel Agency

Table 9: Classification of Service Firms with low Economic Switching Barriers regarding Evaluation Properties, based on Patterson and Ward (2000).

The interactive nature of services enables providers to differentiate their services through relational benefits (Gwinner, Gremler, and Bitner 1998). These include *confidence-*, *social-* and *special* treatment benefits that lead to increased loyalty. *Confidence benefits* refer to psychological benefits such as trust in correct execution of the service. *Social benefits* include recognition by or friendship with employees. *Special treatment benefits* refer to priority treatment or reception of exclusive deals in combination with the service. Services considered to be important by the consumer particularly rely on these benefits, as Patterson and Ward (2000) indicated. Depending

on choice uncertainty and interpersonal contact, these aspects increase individual desire for a continued service relationship, as shown in Table 9.

In the examples with high interpersonal contact the *social benefits* are particularly important to the customer, such as medical services and hair dressing. Some researchers speak of consumers taking the role of *partial employees* of the service provider (Bendapudi and Leone 2003), a notion that is supported in management research in the context of *complex service operations* (Mills and Morris 1986). The implications are that quality perceptions – satisfaction and future intentions – are positively influenced by customer participation (Rodie and Kleine 2000). This is also true for the choice situation, where increased influence through participation can increase propensity to persist (Muthukrishnan and Wathieu 2007). These aspects make the *context*, as well as the *relational* and *interactive* nature of services particularly relevant with regards to the consideration of lock-in mechanisms, which is discussed more closely in Section 3.1.2.2.

The last point Gronroos (1990) makes refers to the long-term orientation and the stages of a customer relationship. From a provider viewpoint, *relationship marketing* describes a strategic orientation in marketing to retain existing customers, in order to stay successful in ongoing or periodic service markets (Berry 1983). One goal of relationship marketing is thus managing retention strategies, in order to increase loyalty and make the customer a client, an advocate, or even an evangelist (Rodie and Kleine 2000). Considering the variation of service types mentioned in the beginning of this section, the questions that this research is interested in limit the scope of consideration to services with particular features of the relationship following the decision. Relevant features of such a decision were outlined in Section 2.2.3. From a provider perspective, managing the marketing relationship strategy is important for services that entail *service relationships*, particularly if the services they provide fulfill the following conditions (Berry, 1983, p. 25):

1. They entail continuous/periodic customer desire.
2. The customer has control over provider choice.
3. There are alternative providers for the customer to choose from.

The requirement of *continuity* was mentioned in the previous sections as affecting satisfaction evaluations (Bolton 1998), but the other requirements equally align with the preconditions for decisions assumed relevant for consumer lock-in development. Situations where the consumer lacks choice may spur inherent persistence, rather than potentially causing individual path dependence culminating in lock-in. The same is

true for decisions in monopoly markets. Control in services even goes beyond choice and also influences the service experience (Hui and Bateson 1991). Availability of alternatives is thus an equally important condition.

As for the consumer-side of such service relationships, Dwyer et al. (1987) introduce the phases of *awareness*, *exploration*, *expansion*, and *commitment*, which involve rising interdependence between buyer and seller. The case of such relational exchange transcends the idea of a sequence of events that make up the process of the relationship, where the events are connected and interdependent. The analogy to a marriage in this case is not far from the truth; “*a restrictive trade agreement with high termination costs, which forecloses social and sexual options, brings expanded responsibility and demands*” (Dwyer et al., 1987, p. 14). The next section goes deeper into the subject of developing customer bonds as a managerial means of building commitment, to identify what bonds are relevant for lock-in and how they affect service evaluation.

2.3.2 Retention and the Strategic Dimension of Customer Bonding

Considering the process the presented types of services entail, the mechanisms leading to consumer lock-in need to be identified. The consumer behavior section of this work referred to consumer loyalty as an effect of satisfaction and deduced that loyalty in absence of satisfaction and/or commitment can be described as lock-in, with cognitive dissonance reduction in the case of continued loyalty. Such loyalty has been described as the central goal of marketing activity due to the economic value of loyal customers (Reichheld and Sasser 1990). Relationship marketing also refers to loyalty as consumer retention – *the repeated patronage by a customer* – which is a success factor of relationship marketing activities (Hennig-Thurau and Hansen 2000).

The aforementioned evaluative measures – *satisfaction*, *trust*, and *commitment* – are in this context considered dimensions of relationship quality (Hennig-Thurau, Gwinner, and Gremler 2002). As established with regards to the post-decision process, Morgan and Hunt (1994) elaborate on the reliability of sellers with their *commitment-trust theory of relationship marketing*, which holds true for all relationships a firm has. According to this theory *trust* in the firm increases *commitment*, which has a negative effect on propensity to leave the relationship but raises willingness to acquiesce and cooperate. Precursors of relationship commitment are relationship termination costs, relationship benefits and shared values. Loyalty in a situation of low relationship

quality may then be interpreted as customer lock-in, which is explained through *barriers* working as lock-in mechanisms.

From a managerial perspective such consciously imposed barriers can be defined in terms of *retention strategies*. They have been discussed as *customer bonds* by Berry and Parasuraman (1991) under the title “*Marketing to Existing Customers*”. The researchers identified three levels of bonds that rise in intensity. Table 10 shows these levels and their properties.

Level	One	Two	Three
Type of Bond(s)	Financial	Financial and Social	Financial, Social, and Structural
Marketing Orientation	Customer	Client	Client
Customization	Low	Medium	Medium to High
Primary Marketing Mix Elements	Price	Personal communications	Service Delivery
Competitive Advantage Potential	Low	Medium	High
Examples	Frequent Flyer Programs	Salesperson-client relationships in the Life Insurance Industry	B2B Key Account Solutions

Table 10: Three Levels of Customer Retention Strategy in Relationships by Berry and Parasuraman (1991) adapted by Berry (1995) and Patterson and Ward (2000).

On *level one* the bonds are mainly financial in nature and are assumed to be low in effect because they are easily imitated. The example of loyalty programs in the airline industry shows that it is applicable to single transaction services that are not important and complex. *Level two* adds the social level, namely personal service delivery and customization to individual needs. *Level three* complements structural bonds – highly customized service elements regarding the structure of the service delivery that are unique to a provider and not easily replicable.

While referring to strategic decisions, there is similarity with the mechanisms. Particularly on levels two and three there are parallels to the factors identified as relevant for the development of consumer lock-in. For level three, the authors argue that well executed structural bonds “*raise the clients’ cost for switching to competitors*” (Berry and Parasuraman, 1991, p. 140) shifting the attention to the effects on the client side.

Diller (2000) further examines the effects of bonding activities on customers and the desired outcome: *customer loyalty*. Table 11 shows how he connects customer bonding in the form of penetration rates to satisfaction, involvement and commitment, looking at how – based on these dimensions – loyalty outcomes can be interpreted.

Customer Penetration	Satisfaction		Involvement		Commitment		
	Low	High	Low	High	No	Bought	Voluntary
High	Tenuous loyalty	Well-founded loyalty	“Cold” loyalty	“Hot” loyalty	Involuntary loyalty	Bought loyalty	Voluntary loyalty
Low	No loyalty	Potential loyalty	No loyalty	No loyalty	No loyalty	Failed loyalty	No loyalty

Table 11: Customer Bonding as Customer Penetration in Relation to Satisfaction, Involvement, and Commitment, based on Diller (2000), pp. 33-35.

When considering *high* customer penetration as a form of successful bonding, it can also be assumed that this loyalty behavior can result in *consumer lock-in* for some of the loyal consumers identified in the aggregate. This case is characterized by at least temporarily low levels of satisfaction and commitment. Involvement must be considered as involvement with the product, not the decision as elaborated in Section 2.2.2.2.

While Diller (2000) stipulates that “*the loyalty of customers has to be properly analyzed in order to see whether it is based on involvement, commitment and satisfaction or whether it is there by default or only based on prevailing circumstances*” (p. 35), the case of consumer lock-in has not been explicitly considered in his conception. In the case of lock in and low satisfaction he speaks of *tenuous loyalty*, which can be argued as a temporary state resulting in an adaptation of satisfaction, which in turn however would not necessarily be “well-founded”. Only in the case of no commitment he speaks of *involuntary loyalty*, which is in line with the argument this work makes. He explains this case with a monopoly situation, while the premise of this work offers an alternative explanation: a phase that normalizes in case of consumer lock-in.

From the consumer perspective, the described strategic bonds – in absence of satisfaction and commitment – may force an involuntary long-term loyalty. They can thus be understood in terms of lock-in mechanisms. In line with the argument by Berry and Parasuraman (1991), these are in a marketing context best described as switching costs, which are elaborated in the following section.

2.3.3 Switching Costs as Mechanisms leading to Consumer Lock-in

The most important aspect of phase II of the consumer lock-in process are the mechanisms facilitating such lock-in. Section 2.1.4 introduced the differentiation between the *individual-* and *social level* of such mechanisms. The evaluation process following a decision in the described contexts can leave some consumers in cognitive dissonance. Section 2.2.2.2 elaborated on post-decision processes, where lock-in

mechanisms determine the mode of dissonance reduction. Based on the definition for consumer lock-in for this work, the mechanisms posing barriers to switching in service relationships are examined in this section. As mentioned in Section 2.2.2.1, particularly environmental influence is relevant and has received particular attention in relationship marketing research. Personal, social, and institutional influences motivate consumers to engage in relational market behavior (Sheth and Parvatlyar 1995). Despite relational benefits, consumers may find that the service does not meet their *expectations*, which is a proxy of misfit, as it shows that the service is not considered adequate (Zeithaml, Berry, and Parasuraman 1993); they may then experience *regret*, *dissatisfaction* and *low commitment*.

When looking at the psychological implications of *customer participation*, Bendapudi and Leone (2003) differentiate between *dedication-based* and *constraint-based* reasons for relationship maintenance in the services context. As presented in the previous section, Berry (1995) referred to possible constraints as customer bonds with their highest potential in services that require a high degree of customization. In such primarily constraint-based relationships, switching intentions are lower (Fullerton 2003). The resulting loyalty, however, is mostly based on perceived switching costs for consumers (e.g. Pick and Eisend, 2013). As Patterson and Smith (2003) state, switching costs can lead to customer retention despite reasons for disloyalty, effectively *locking in a customer* (p. 107).

Some researchers in services marketing also refer to these mechanisms as *switching barriers*, to differentiate the financial dimension from relational and other dimensions. According to Jones, Mothersbaugh, and Beatty (2000) switching barriers “*represent any factor, which makes it more difficult or costly for consumers to change providers*” (p. 261). So while some of the terminology in marketing focuses on switching costs, these can also be understood in terms of termination barriers in service relationships (Bendapudi and Berry 1997). In this work the term **switching costs**, subsumes all dimensions inhibiting consumer switching behavior.

Burnham et al. (2003) use the term switching costs, distinguishing perceived *procedural*, *financial* and *relational costs* of switching. As Table 12 shows, these costs can be categorized by level of the lock-in mechanism, supporting the distinction between the two levels. *Procedural costs* are described as expenditure of time and effort and are subdivided in *economic risk*, *evaluation*, *set-up*, and *learning costs*. For the most part, these costs are an element of the decision context selected relevant for this work, rather than process relevant, precluding an interpretation as mechanisms.

The *economic risk, evaluation, and set-up costs* are such context aspects, connected to the importance and uncertainty of the decision, but not directly working as lock-in mechanisms. Burnham et al. (2003) describe them as “*Accepting uncertainty with the potential for a negative outcome when adopting a new provider about which the consumer has insufficient information*”, “*Time and effort [...] associated with collecting the information needed to evaluate potential alternative providers*”, and “*Costs associated with the process of initiating a relationship with a new provider*” (p. 111).

Procedural Switching Costs				Financial Switching Costs		Relational Switching Costs	
Economic Risk Costs	Evaluation Costs	Set Up Costs	Learning Costs	Benefit Loss Costs	Monetary Loss Costs	Personal Relationship Loss Costs	Brand Relationship Loss Costs
Context aspects			Individual Level mechanisms		Social Level mechanisms		

Table 12: Typology of Consumer Perceptions of Switching Costs based on Burnham et al. (2003) and Associated affected Level.

The *learning costs* however are relevant in the process and have been described as an *individual level lock-in mechanism*. They entail fixed investments of effort that is idiosyncratic and increases over the course of the relationship. Additionally, *financial costs* involve the loss of financially quantifiable resources and add to the *individual level lock-in mechanisms*, including loss benefits gained due to an ongoing relationship and sunk investment costs.

Relational costs comprise personal relationship and brand relationship aspects. Personal relationships on the social level were described in terms of a *higher level bond* in the previous section. These costs are particularly prevalent in services with a high interpersonal component where they play an important role. The brand relationship costs refer to the relational connection to the brand or company the consumer with regards to the meaning he draws from the brand. The described costs are subsumed under *social level lock-in mechanisms*.

Burnham et al. (2003) found that all three categories of switching cost types affect the intention to stay with a service provider. His broad categorization serves as a starting point for exploration of these barriers in the case of consumer lock-in in service relationships. In the following, studies that have further elaborated on relevant *switching costs* in a variety of service contexts are reviewed and categorized for the mechanism level.

Jones et al. (2000) examined *interpersonal relationships, perceived switching costs, and attractiveness of alternatives* regarding their relevance for customer satisfaction

and retention. They found that switching barriers are particularly relevant when satisfaction with a service is low, positively influencing repurchase intentions in such cases. The costs had no influence in cases of high satisfaction, which supports their interpretation as lock-in mechanisms in phases of negative evaluation.

A subsequent study by Jones et al. (2002) proposes a clearer outlining of switching costs in services, identifying the following dimensions: *lost performance costs*, *uncertainty costs*, *pre-switching search and evaluation costs*, *post-switching behavioral and cognitive costs*, *setup costs*, and *sunk costs*. All of these were found to be positively related to repurchase intentions, with different intensity and depending on the service context. The identified dimensions fit with the conception in this work and are elaborated in the conceptualization of the mechanisms.

The previously mentioned study by Patterson and Smith (2003) coined the term *captive loyalty*. The researchers added the cultural dimension and the service context dimension by examining three different services in a Western and Eastern culture – implicitly referring to the two aspects assumed relevant for the development of individual path dependence: *individual differences* and *context*. They examined *search costs*, *loss of social bonds*, *setup costs*, *functional risk*, *attractiveness of alternatives*, and *loss of special treatment benefits* for their effect on propensity to stay with a service provider. The strongest effects were found for the *potential loss of special treatment benefits* and *loss of a friendly, social relationship*. Their findings do not suggest great influence of culture on this relationship, but support the notion that differences between contexts are considerable and that switching costs “capture a substantial amount of the explained variance in the dependent variable, propensity to stay with a focal service provider” (Patterson and Smith, 2003, p. 107).

Jones, Reynolds, Mothersbaugh, and Beatty (2007) examined switching costs focusing on the relational outcomes, i.e. commitment considerations. They argued that much previous research ignored the potential negative effects of locking customers by means of switching costs – like negative word of mouth (WOM) or sabotage. Their findings include that *social switching costs* and the *lost benefits costs* pose “positive” constraints and increase affective commitment, leading to positive emotions and positively affecting repurchase intentions and WOM. *Procedural costs* on the other hand pose “negative” constraints, leading to calculative commitment and negative emotions, as well as negative WOM. The emotional aspect of their work implicitly refers to satisfaction considerations, as consumption emotions can be seen as an antecedent of satisfaction (Richins 1997).

Table 13 summarizes the reviewed studies and their main aspects relevant for this work. It is part of the research by Woisetschläger et al. (2011), who examined the effect of *habits*, *social ties*, and *economic switching barriers* on loyalty in contractual service settings. Their work also supported the cost dichotomy found in the other works and states that the influence of satisfaction on loyalty is high, when social and economic switching barriers are low. When these barriers increase, however, this relationship is weakened and the barriers become the main drivers of loyalty.

Author(s), year	Context	Individual Level	Social Level
Burnham et al., 2003	Telecommunication, Financial Services	Procedural switching costs, Financial switching costs	Relational switching costs
Jones et al., 2000	Banking, Hairstylists	Perceived Switching costs, Attractiveness of alternatives	Interpersonal relationships
Jones, Mothersbaugh, and Beatty, 2002	Banking, Hairstylists/Barber	Uncertainty costs, Search Costs, Post switching behavioral and cognitive costs, Setup and sunk costs	Lost performance costs
Patterson and Smith, 2003	Travel Agencies, Medical Services, Hairstylists	Risk, Search costs, Attractiveness of alternatives, Relationship age	Loss of relationship, Explain preferences, Loss of special treatment
Jones, Reynolds, Mothersbaugh, and Beatty, 2007	Miscellaneous Services (Respondent selection)	Lost benefit costs, procedural switching costs	Social switching costs

Table 13: Selection from literature review on switching barriers differentiated by mechanism level, based on Woisetschläger, Lentz, and Evanschitzky (2011), p. 802.

The presented findings on switching barriers in service relationships point to the importance of *service contexts*, *satisfaction* and *switching costs* as dimensions of commitment and behavioral loyalty. Consumer behavior is greatly affected by switching costs, particularly in situations of low satisfaction, which also affects commitment, working as a lock-in mechanism. Under *uncertainty* these mechanisms can work on the **individual level** in the form of *learning and habituation* and *financial costs* and or on the **social level**, in the form of *relational integration* that leads to idiosyncratic benefits of one service over alternatives. Both levels are further elaborated in the model development in Sections 3.1.2.1 and 3.1.2.2.

Another important point that can be derived from the various scopes seen in different studies on switching costs is that they differ by service *context*. The next section considers the influence of the context dimension on potential development of consumer lock-in.

2.3.4 Context Dimensions that facilitate Consumer Lock-In

Services are more and more prevalent in Western societies, generating a great variety of services with different properties. The properties and characteristics of a service creation and consumption process depend greatly on the type of service delivered and are relevant for decision properties and complexity considerations, as well as the extent of the evaluation in the process that follows. Thus, not all types of services fit the decision and process properties that facilitate consumer lock-in in the path dependent sense.

Distinctions regarding service properties can be made regarding various aspects of the service. These influence the context and structure of the process as well as its prospect regarding switching costs and lock-in. Lovelock (1983) wrote on the classification of services focusing on how they affect the marketing task. He identified five relevant dimensions of services with varying properties that services can take: *The nature of service, the relationship with customers, the customization intensity, the supply properties and the method of service delivery.*

The following tables display these dimensions along with exemplary services for each dimension. They serve to identify dimensions of important services that entail an interactive process of experience and evaluation with potential for lock-in. When considering the potential of services rendering the properties identified viable for consumer lock-in, they are more likely to be identified along some of these dimensions.

<i>What is the Nature of the Service Act?</i>	Who or What is the Direct Recipient of the Service?	
	People	Things
Tangible Actions	<i>Services directed at people's bodies e.g. health care, restaurants, haircutting</i>	<i>Services directed at goods and other physical possessions e.g. laundry and dry cleaning, landscaping/lawn care, veterinary care</i>
Intangible Actions	<i>Services directed at people's minds e.g. education, information services, museums</i>	<i>Services directed at intangible assets e.g. banking, legal services, insurance</i>

Table 14: The Nature of the Service Act, according to Lovelock (1983), p. 12.

Considering the *nature of the service act* in Table 14, the direct *recipient* of a process based service is more likely a person, as “*individual lock-in processes*” are at the core of this work – processes that are inherently cognitive and idiosyncratic. Regarding *tangibility of action*, both services directed at the body and the mind are feasible for a process. Tangibility of actions should not be confused for tangibility of the product, since services per definition are intangible, i.e. entail actions (Zeithaml, Bitner, and

Gremler 2006). Consumers may be locked in to services directed at things they own but services directed at them may be more *important*, increasing involvement and individual risk.

The most obvious relevant dimension from the provider’s point of view is the *relationship* with the customer in Table 15. Here services that are *continuously* delivered and services that entail a “*membership*” type of relationship are necessary in order to involve an individual cognitive process and potential for lock-in, as implied in the path dependence conception. For this reason service relationships were considered particularly interesting in Section 2.2.2.1, as they imply an *extensive post-decision process*. It is within such a process, that lock-in is expected to develop, inhibiting path exiting, rather than leading to a repeat decision without a formal relationship.

Nature of Service Delivery	Type of Relationship between the Service Organization and Its Customers	
	"Membership" Relationship	No Formal Relationship
Continuous Delivery of Service	e.g. insurance, banking, college enrollment.	e.g. radio station, police protection, public highway.
Discrete Transactions	e.g. commuter ticket or transit pass, theater series subscription, long-distance phone calls.	e.g. public transportation, mail service, movie theater.

Table 15: The Relationships with Customers, according to Lovelock (1983), p. 13.

In the cases that entail no formal relationship often no or limited choice is left to the consumer. *Discrete transactions* refer to the repeated choice lock-in that is not in focus of this work. Lock-in is possible with repeated consumption decisions however, as other works on individual path dependence and lock-in have shown (e.g. Koch et al., 2009; Langer, 2011).

Extent to which Customer Contact Personnel Exercise Judgment in Meeting Individual Customer Needs	Extent to Which Service Characteristics are Customized	
	High	Low
High	e.g. legal services, taxi service, education (tutorials).	e.g. preventive health programs, education (large classes).
Low	e.g. telephone service, hotel service, good restaurant.	e.g. movie theater, public transportation, movie theater.

Table 16: Customization and Judgment in Service Delivery, according to Lovelock (1983), p. 15.

Interaction customization in Table 16 was identified as a proxy for consumer lock-in in the form of social level lock-in mechanisms. Section first 2.2.2.3 pointed to the importance of environmental influence on consumer decision processes and the previous section elaborated further on the relational aspect of service relationships. Services that require *high customization* on both the interpersonal and the service level entail higher risk and also bear the potential for entrenchment due to special treatment

benefits, customized to individual needs – as implied in co-creation. Since the frontline employees are the enablers of customization, both factors are related to the interactional dimension (Bettencourt and Gwinner 1996).

<i>Extent to which Supply is constrained</i>	Extent of Demand Fluctuations over Time	
	Wide	Narrow
Peak Demand can Usually be met without a Major Delay	1) <i>e.g. electricity, natural gas, telephone.</i>	2) <i>e.g. insurance, legal services, banking.</i>
Peak Demand Regularly Exceeds Capacity	3) <i>e.g. hotels and motels</i>	4) <i>services similar to those in 2) but which have insufficient capacity for their base level of business</i>

Table 17: Nature of Demand for the Service, according to Lovelock (1983), p. 17.

The *demand for a service* in Table 17 – its fluctuation and supply constraint – is not directly related to the process character of such a service and not expected to affect the potential for lock-in. This is an aggregate aspect of services that does not focus on the individual consumption process. It however affects it indirectly in the decision situation and the form of *service quality*, if demand cannot be met. Supply constraints may contribute to an exclusivity perception of services, adding to their perceived importance and also causing uncertainty. Market-level aspects such as demand fluctuations however are not in focus of this work.

<i>Nature of Interaction between Customer and Service Organization</i>	Availability of Service Outlets	
	Single Site	Multiple Set
Customer Goes to Service Organization	<i>e.g. theater, barbershop.</i>	<i>e.g. bus service, fast food chain.</i>
Service Organization Comes to Customer	<i>e.g. taxi, pest control service, lawn care service.</i>	<i>e.g. mail delivery, AAA emergency repairs.</i>
Customer and Service Organization Transact at Arm's Length (Mail or Electronic Communications)	<i>e.g. local TV station, credit card co.</i>	<i>e.g. broadcast network, telephone co.</i>

Table 18: Method of Service Delivery, according to Lovelock (1983), p. 18.

The last dimension identified by Lovelock (1983), the *method of service delivery* in Table 18, can also affect the potential for consumer lock-in, as well as imply lock-in mechanisms. While direct contact provides a higher potential for social level mechanisms leading to lock-in, “arm’s length” contact does not have a strong interpersonal dimension. Nonetheless Shapiro and Varian (1999) identified potential for lock-in in information services, which can however be mainly attributed to individual level mechanisms. The service outlet dimension has a similar implication: Single site services provide more room for continued interaction with the same individuals, increasing the potential intensity of social level lock-in mechanisms. The

individual level of mechanisms may be more important in services with indirect interaction or provision in multiple sites.

The work by Lovelock (1983) points to important differentiations of services and gives examples for these dimensions. One dimension only implicitly considered by Lovelock (1983) is *customer participation*, which was differentiated by Bitner et al. (1997) as shown in Table 19. In the case of high customer participation, the client has to actively participate in the creation and customization of the service. His inputs and presence are necessary, as the outcome is co-created. The authors state that “[a]ll forms of education, training and health maintenance fit this profile. Unless the customer does something (e.g. studies, exercises, eats the right foods), the service provider cannot effectively deliver the service outcome.” (Bitner et al., 1997, p. 195). Such cases are likely to create customer lock-in, because individual *investment* of effort into the service is high, causing it to be perceived as more risky and the outcome more uncertain.

Low: Customer presence required during service delivery	Moderate: Customer inputs required for service creation	High: Customer co-creates the service product
<i>Products are standardized</i>	<i>Client inputs customize a standard service</i>	<i>Active client participation guides the customized service</i>
<i>Service is provided regardless of any individual purchase</i>	<i>Provision of service requires customer purchase</i>	<i>Service cannot be created apart from the customer's purchase active participation</i>
Examples: Airline travel, Motel stay, Fast-food restaurant	Examples: Haircut, Annual physical exam, Full service restaurant	Examples: Marriage counselling, Personal training, Weight-reduction program

Table 19: Levels of Customer Participation, according to Bitner et al. (1997), p. 194.

Looking back at the conditions stated by Berry (1983), the cases of relationships that entail continuous/periodic customer desire and leave the consumers both in control over provider choice as well as give them alternatives to choose from, are particularly relevant for strategic management of the relationship. These dimensions were also assumed relevant for the development of consumer lock-in in this relationship.

The examples provided by Lovelock (1983) that suit these dimensions include *health care, education, legal services, college enrollment, and banking*. These are examples for services with a strong potential for consumer lock-in, not excluding that services with other dimensions might entail a form of consumer lock-in. In the following section, the findings on consumer lock-in in a service relationship process are summarized and propositions are derived.

2.3.5 Summary of the Lock-in Process in Service Relationships and Research Propositions

The goal of this section was elaborating on research in service relationships and its relevance for the phenomenon of consumer lock-in. Based on the conclusion that services are particularly interesting for the development of consumer lock-in, the distinguishing features of services and service relationships were discussed. Marketing activity in such a service relationship focuses on the relational nature of the service, in order to connect and bond with customers and create a mutual benefit, with satisfaction and commitment as central determinants of service quality.

Bonding activities are dominant in this context and can be both a part of the service and its context, as well as actively pursued by the service provider. These strategies are sometimes referred to as *customer lock-in* activities, contrary to *consumer lock-in*, which describes the consumer perspective and was defined in Section 2.2.3. Here, services that require high and ongoing investment, have a strong relational component, and are important to the customer were identified as prone to consumer lock-in. Some of these aspects can be strategically influenced, which is thus referred to as customer lock-in.

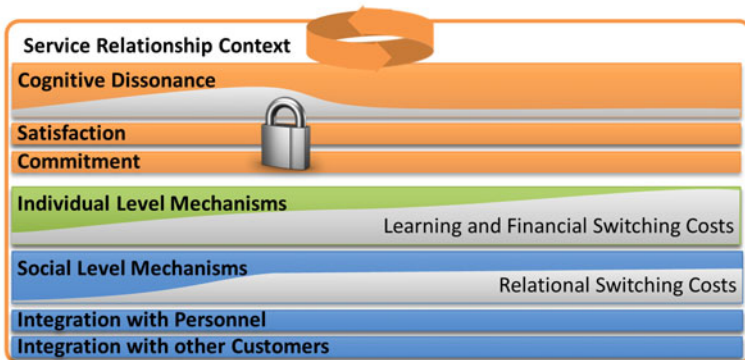


Figure 7: Summary of Service Relationship Features with Switching Costs as Lock-in Mechanisms.

With a higher degree of customer participation, the outcome uncertainty and the continuity of the process all contribute to the potential for cognitive dissonance in evaluation over the course of the process. Figure 7 summarizes the consumer side aspects of a *service relationship process* with potential for consumer lock-in. Within the context of important service relationships, early phases of experience, participation, and co-creation are important determinants of perceived quality and

evaluation – often measured through commitment and satisfaction. These can lead to cognitive dissonance, if they are indicative of a perceived misfit of the service. The occurrence of cognitive dissonance is signified by a wave within the cognitive dissonance box. As introduced, dissonance reduction occurs, which may be indicative of consumer lock-in.

At the same time, the entrenchment into the idiosyncrasies of the service occurs – the lock-in mechanisms come into effect, also in the form of bonding activities pursued by the service provider. From the consumer behavior perspective, the bonding activity can be understood as a generator of *switching costs*. These costs can be differentiated along various dimensions, but they can adequately be interpreted and categorized by the level on which they work as a reinforcing mechanism: the *individual level* and the *social level*. An idiosyncratic combination of these mechanisms increases over the course of the service relationship.

Some of the switching costs identified by (Burnham, Frels, and Mahajan 2003) translate into lock-in mechanisms and affect loyalty in situations of bad service fit. As stated in Section 2.2.2.2 this behavioral effect is related to cognitive dissonance reduction, leading to the following proposition for the theoretical model:

Proposition 3.1: Switching costs work as lock-in mechanisms, influencing a consumer’s decision for dissonance reduction regarding dissonance between evaluation of and loyalty to an important service relationship.

As identified for consumer behavior, the *environment* is important for consumer decision processes. While consumers differ in their tendency to be responsive to social influences, consumption processes in services have a particularly strong *interpersonal* component which determines the service outcomes and perceptions and can be an important contributor to switching costs. The next proposition captures this aspect.

Proposition 3.2: Social switching costs are the primary lock-in mechanism in service relationships with a high interpersonal component.

These costs are contributed by the relational nature of many services that raise barriers to switching or exiting the relationship. They are here more potent than other barriers. This is because they pose more “positive” constraints and were found to affect positive emotions, as was argued in Section 2.3.3. This also affects the individual awareness of the entrenchment, which can be assumed to be lower for relational dimensions than individual level mechanisms like financial switching costs or more cognitively available ones like learning and habituation.

This proposition concludes the theoretical foundation for consumer lock-in in service relationships. The section started out with answering the first research question of this work on why consumer lock-in occurs. The answer was developed over the course of the elaboration and connection of three research fields. It can be summarized as follows: Lock-in mechanisms lead to locked-in behavior in the path dependent sense, but the phenomenon is limited and more likely to occur in certain contexts. Complex consumption decisions that are individually important and entail an exclusive process are more likely to entail such sticking behavior. Service relationships are particularly interesting for this phenomenon as they entail a process, with some contexts being more applicable than others. Switching costs seem to form the barriers causing individual lock-in in these contexts; a phase of cognitive dissonance however is a prerequisite for consumer lock-in. The next section combines the points from path dependence-, consumer behavior-, services-, and relationship marketing research into a model describing this phenomenon and its process features.

3. A Model of the Consumer Lock-in Process in Service Relationships

In the previous section, a wide array of relevant research was covered, the interrelations between the different research fields were outlined and propositions were derived to capture the essence of what constitutes a consumer lock-in process and its potential of ending in lock-in. The goal of this section is collecting and connecting the derived concepts and propositions in forming a foundational model for the analysis of *path dependence* and *individual lock-in in service relationships*. This section aims at developing such a model based on the findings of the theoretical foundation. Outlining this model also serves to answer the third research question:

RQ 3: How does the consumer lock-in process work and what mechanisms work for the development of locked-in consumption behavior? Do these mechanisms justify calling the lock-in path dependent?

In Section 2.1.5 it was postulated that the phase-based path dependence conception from organizational path dependence can be adapted to the individual path dependence process as it has similar contextual conditions. Over the theoretical section this individual process was distinguished from repeated choice models of locked-in behavior. Services context were considered most relevant for consumer lock-in processes. Based on this notion, Section 3.1 presents a general model based on the theoretical conception of path dependence with individual behavior in consumption contexts that entail service relationships and co-creation processes. Following the development of the general model, the premise of the model is explored by adapting the model to a real world service context: a consumption process in higher education. In Section 3.2 research on educational persistence is examined to assure that the model fits in this context and the model is adapted accordingly.

3.1 Theoretical Model

The theoretical groundwork in Section 2 provided an extensive review of the theory behind path dependence and the lock-in process. Individual decision making and lock-in were discussed as a relevant but understudied level of analysis for technological, organizational, and other forms of path dependence. The current understanding of consumer lock-in in consumer behavior was explained and connected to these concepts in deriving a definition for this work. The goal was to connect research on psychology and consumer behavior with an understanding of lock-in in path

dependence research in order to establish a notion of decisions and how they can cause persistence in the consumption process for this work. Service relationships were identified as viable for this form of consumer lock-in, so that service marketing and relationship marketing research were further elaborated within the scope of their strategic dimension, their idiosyncrasies in research, and potential for a consumer lock-in outcome.

The process view of path dependence was shown to be applicable to the individual level, with individual lock-in as an outcome. It became evident over the course of the theoretical review, that individual path dependence can follow an individual decision and depends to a great degree on individual cognition processes – the evaluation of a sequence following a decision. In line with Schreyögg and Sydow (2011), this sequence can be categorized in three phases with properties similar to those found in organizational path dependence.

Proposition 1.1: Individual lock-in is the final phase of a three phase cognitive process with path dependent properties.

The described properties – process nature, sequencing and history matters – are relevant regarding the *decision situation*, the *mechanisms* reinforcing the choice over the consumption process and the *lock-in outcome*. The general model of the individual process of consumer lock-in is first discussed with regards to the decision in Section 3.1.1. What follows is the beginning of the service relationship. Phase II marks the relevant part of the process, as it determines individual perception of lack of fit that is a prerequisite of lock-in. This process and the lock-in mechanisms are subject of Section 3.1.2. Lastly, the lock-in outcome, combined with an overview of the general model, is discussed in Section 3.1.3.

3.1.1 Decision Making in the Context of Individually Important Services

In *phase I* of the model, the individual considers available alternatives in the market, i.e. a unilateral consideration of exchange partners (Dwyer, Schurr, and Oh 1987). Individual characteristics, past events – including the initial decision to evaluate alternatives and search – govern this process, and can render it *path dependent* (David 2007). From a consumer decision making process perspective, this entails the phases of *need recognition*, *search*, *evaluation of alternatives* and *purchase* (Blackwell, Miniard, and Engel 2001). It includes internal and external information search, while ex ante evaluation of available service offerings and their fit are limited. This is why they are typically referred to as *experience* or *credence goods* (Darby and Karni 1973).

What follows is the *evaluation of available alternatives* and the decision in form of a *purchase* which implies an idiosyncratic investment of financial resources but also effort. It also means giving up alternatives due to the choice exclusivity. This individual decision for a service provider then forms the *critical juncture*. It is the exclusive individual decision for one of the offers from the available choices. The concept stems from political research (Collier and Collier 1991) but is readily applicable to path dependent decision making during which legacy of a critical decision also plays a crucial role for a current assessment (*history matters*).

In the section on consumer behavior, complex consumption decisions that entail *uncertainty* and *entry of a continuous process* were identified as facilitators of consumer lock-in because they lead to consumer behavior susceptible to counterintuitive outcomes. In the following, *customer participation*, *customization*, and *continuity of delivery* were added. Considerations in the context of the service relationship process start with the transition from *phase I to phase II*, characterized as the exclusive decision for one alternative. Certain aspects of the decision were identified to facilitate lock-in in Section 2.2.3, leading to the following proposition:

Proposition 2.1: Consumer lock-in to a consumption process is likely with complex consumption decisions that are individually important, entail outcome uncertainty, and require exclusive, considerable, and ongoing investment from the consumer.

This type of decision is prevalent in *service markets*. Goods markets and repeated decision contexts are less likely to adhere to these conditions, which is why this model was limited to service relationships. Examples include decisions for services in the areas of *health care*, *education*, *legal services*, *college enrollment*, and *banking*. Following the exclusive decision for such a service, the available alternatives cannot be chosen at the same time. The exclusive consumption process begins with *phase II* of the process.

Figure 8 summarizes this process and the drawn conclusions, combining them with the phase based path dependence model from Section 2.1.5 to illustrate how the conception evolved due to the amendments from consumer behavior research.

Consequently, a consumer's entry into the service relationship means a shift in individual attention, towards evaluation and the selected service provider with an agenda regarding the process course and properties. As mentioned in Section 2.3.1, the following features were identified as particularly important for strategic management of service relationships:

1. They entail continuous/periodic customer desire.
2. The customer has control over provider choice.
3. There are alternative providers for the customer to choose from.

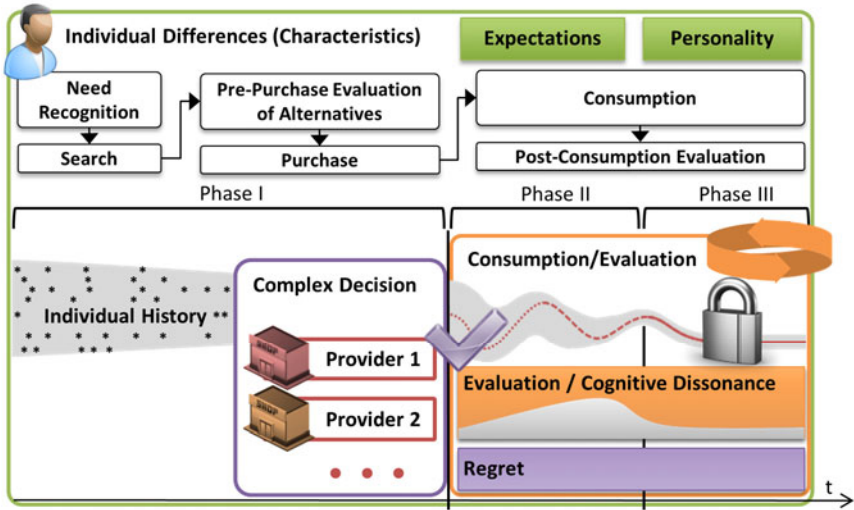


Figure 8: The Consumer Decision Process leading up to Consumer Lock-in to a Decision.

They align with the considerations derived for relevant decision contexts. Individual control, importance and a continuous process guide the decision that puts the individual into the next phase of the process. Particularly the aspect of *availability of alternatives* is perceptible in individual decision making as the alternatives are part of the consideration set. This aspect was thus included in the final model as a decision factor, in addition to *investment*, a factor that inquires individual importance but may also vary individually.

Path dependence reasoning stipulates that the initial choice is intentional but conditional and non-ergodic as the choice is not made entirely free from available choices. *Individual history matters* in that the individual decision process frames the achievable outcome by formation of expectations. A high level of *importance* of the service makes the critical nature of the decision clear, the examples given in previous sections show that service decisions considered in this work are of high personal or financial significance.

3.1.2 The Post-Decision Process in Consumer Lock-in

The phase following the decision, referred to as the “*formation phase*” (Sydow, Schreyögg, and Koch 2009), begins when the individual invests in this exclusive decision and enters the relationship process. The conditions for *phase II* set by the presented path dependence conceptions are fulfilled in the case of service relationships: A regime dominated by the action pattern connected to the selected service takes the lead. The path evolves but may still include *unexpected developments*, at the same time the *lock-in mechanisms* come into effect (Schreyögg and Sydow 2011). In the model, the path development occurs in the early phase of the service relationship during which evaluation occurs and switching costs rise at the same time. As described in Section 2.2.2.2, early phases of the post decision process determine its duration.

The relevant dimensions of evaluation identified for the development of cognitive dissonance are *satisfaction* and *commitment*. Other attitudinal dimensions are viable, similarly depending on the context and nature of the service relationship. The individual and social level mechanisms are embedded in a phase-based process model in which the early phases after the decision determine the outcome because the behavior is led by early experience and entrenchment. In the next paragraphs, the features of the modelled phases are connected regarding the considered research disciplines.

Phase II is equivalent to the *sampling phase* in the lock-in cycle (Shapiro and Varian 1999) and the *exploration phase* in consumption (Dwyer, Schurr, and Oh 1987), where “*termination of the fragile association is still simple*” (p. 21). The *experience good* elements of the service are *evaluated* in this phase and matched with expectations. Over the course of the different stages of the co-creation process, the experience feedback influences individual assessments on different levels, leading to *service evaluation*. *Satisfaction* and *commitment* were identified as central in determining relationship quality perceptions (Hennig-Thurau and Hansen 2000), so they were selected as main evaluation dimensions for the theoretical model. Depending on context, different or additional evaluation dimensions may be viable. In case of a bad individual service experience in this phase and if the resulting dissatisfaction cannot be alleviated, staying in this service causes *cognitive dissonance*. This can be due to a disconfirmation of expectations held about the service, a perceived lack of fit between the individual and the service, a lasting lack of integration, or for other reasons. If this dissonance reaches certain intensity, dissonance reduction becomes necessary.

Proposition 2.2: In consumption processes, individuals engage in an evaluative process which – depending on individual characteristics and perception of fit – can result in cognitive dissonance.

While every consumer goes through a process of cognitive assessment of a selected service, only some individuals are expected to display a lack of fit along cognitive dimensions in this phase – cognitive dissonance (Festinger 1962). The barriers – likewise entrenching every individual in their own way – then influence the individual behavior in the described fashion. Only then, *consumer lock-in* can be assumed as the outcome, which brings about a situation of quasi-irreversibility, not a complete and finite lock-in. Furthermore, cultural and societal influence may be relevant for the individual but is considered in individual dispositions and characteristics to a certain extent.

From the path dependence perspective, individual evaluation is also an important signifier with regards to the efficiency of the path chosen. The proposition refers to the *cognitive* nature of this evaluation process that indicates the potential inefficiency relevant to the development of path dependence (Schreyögg and Sydow 2011). This evaluation also depends on individual characteristics – the consumer history – and the experienced fit with the service, including the interpersonal experience. Sticking to the path requires the individual to reduce the cognitive dissonance by adjusting the attitudes toward the service experience.

Proposition 1.3: Individual lock-in follows a reduction of cognitive dissonance by the individual on the attitudinal level, potentially causing regret.

Consumer lock-in in this model is a situation of potentially unaware inability to switch from or exit a consumption process due to entrenchment with increasing barriers on the individual and/or social level. The reason a path dependent individual is inclined to this way of dissonance reduction over exiting or switching are the *lock-in mechanisms* – barriers to switching bound to the path decision that increase over phase II of the service relationship process. They unconsciously influence the individual persistence decision. The outcome of this process, when the context and individual characteristics lead to a sequence with the described features, is consumer lock-in. The lock-in mechanisms were derived from the conception of positive feedback mechanisms in organizational path dependence (Sydow, Schreyögg, and Koch 2009).

Proposition 1.2: Positive feedback mechanisms work on the individual and/or social level, gradually locking an individual in to a decision and the consequential path.

The described process is also referred to as *entrenchment* (Shapiro and Varian 1999). It occurs gradually, over the course of the process. In the context of consumption, and more particularly services, these barriers are described as *switching costs*. Ongoing investment of individual resources adds to the initial investment into the process, referred to as the expansion phase with deepening interdependence (Dwyer, Schurr, and Oh 1987). This interdependence also plays out on the social level, with integration functioning as a barrier to switching. As explained in the previous sections, these individual and social level mechanisms accumulate with experience and time in the relationship.

Proposition 3.1: Switching costs work as lock-in mechanisms, influencing a consumer’s decision for dissonance reduction regarding dissonance between evaluation of and loyalty to an important service relationship.

Persisting in the process enables these costs to rise, which is true for all consumers but only leads into lock-in in a case of cognitive dissonance. The costs can be described in terms of the mechanisms described for path dependence, working on the *individual* and/or *social level*. Switching costs in service relationships were discussed in Section 2.3.3 and categorized by these two levels. Table 20 provides an overview, including the associated mechanisms from the path dependence conception.

Level	Associated self-reinforcing mechanism	Interpretation for this model	Operationalization
Individual	Investment effects (large set-up or fixed costs)	<i>Idiosyncratic investment of financial resources and effort</i>	Fixed and growing financial switching costs
	Learning effects (habituation)	<i>Idiosyncratic learning (cognitive lock-in)</i>	Growing procedural (learning) costs
Social	Complementarity effects	<i>Social integration as complementary to core service</i>	Growing relational switching cost
	Coordination effects	<i>Direct coordination and integration with personnel</i>	Growing relational switching cost

Table 20: Overview of Potential Lock-in Mechanisms Relevant for the Theoretical Model of Consumer Lock-in in Service Relationships.

The self-reinforcing mechanisms considered relevant for the lock-in to a service relationship process are *investment costs*, *learning effects*, *complementary effects* and *coordination effects*. The actual combination of mechanisms depends on the context. While *adaptive expectation effects* were mentioned as mechanisms also relevant on the social level, they refer to interactive preference formation that affects individual future expectations. This effect influences adoption behaviors in technology markets, but not behaviors within a process. Thus it was not included as a mechanism in this model. It is nonetheless considered implicitly in the process nature of the model: Over the

process, individual assessments and expectations adapt to cognition and potentially cognitive dissonance. This effect can be interpreted as adaptation of *expectations* based on experience. The next section focuses on the mechanisms that add to these individual investments post-choice in the form of effort, learning, and financial resources.

3.1.2.1 Individual Level Lock-in Mechanisms

The transfer of cost based self-reinforcing mechanisms to switching barriers in a consumption context is straightforward. The effects can be understood in terms of *idiosyncratic economies of scale* and can be interpreted directly in the form of both procedural and financial costs reinforcing the relationship.

Financial costs are incurred due to the provider choice. The initial sunk costs are incurred by selecting one alternative over others are accounted for as fixed investments in this choice and can be subsumed under the initial decision investment. They cannot be recovered in case of termination or switching. Depending on the type of service relationship, financial costs can vary, but they are implied in any service as important drivers of choice (Burnham, Frels, and Mahajan 2003). These costs that are present as barriers include search costs and contractual commitments external to the core service. Although they have no self-reinforcing quality as they are context specific, they nonetheless can be powerful switching barriers. They are subsumed under **investment** in this work and include the initial sunk costs and are distinguished from the ongoing financial investment in the relationship.

These ongoing financial costs rise over the course of the process as *individual level mechanisms* that further reinforce the choice. In path dependence, the financial dimension of decisions was mainly discussed in terms of technology choice and investment (Arthur 1989). Consumption decisions have an explicit financial dimension to the decision, which differentiates them from organizational decisions, where this dimension is more implicit.

Procedural costs were described as an element of individual lock-in mechanisms as described in Section 2.3.3. Once in the relationship, procedural costs imply the expense of time and effort into a service relationship, leading to experience with a partner. This experience builds confidence and reduces perceived risk, particularly for services that are high in complexity, variability, and involvement (Berry 1995). The increasing experience in a relationship reinforces the choice and can translate into a barrier for exiting or switching cost, when a consumer is dissatisfied with the service.

Complexity was identified as a trigger to lock-in in a consumer decision context (Koch, Eisend, and Petermann 2009). These aspects were supported in a study by Colgate, Stewart, and Kinsella (1996). They found that *time and effort* needed for switching as well as *uncertainty about alternatives* make customers stay with service providers. Patterson and Smith (2003) refer to costs on both levels as switching barriers in service relationships: *Search costs, attractiveness of alternatives* and *length of patronage* all explain variance in the propensity to remain with a service provider.

Learning and habituation are identified to be working on the individual level, in line with the described *learning effects* working as self-reinforcing mechanisms in path dependence building. Procedural costs serve as the operationalization of these effects. The underlying phenomenon is also referred to as behavioral lock-in (Barnes, Gartland, and Stack 2004). Johnson, Bellman, and Lohse (2003) describe the phenomenon of *cognitive lock-in*, supporting the notion that learning and familiarization are a trigger. They refer to these as cognitive costs that decrease with experience – leading in turn to an increase of cognitive switching costs. This notion has found support by Murray and Häubl (2007), who established the term cognitive lock-in, where repeated experience in consumption leads to habituation and a form of loyalty caused by switching costs. *Learning* was shown to be relevant for path dependent behavior in cooperative contexts (Egidi and Narduzzo 1997).

As described, *cognitive loyalty* and *lock-in* can be caused by the described individual level barriers. Bendapudi and Berry (1997) summarize idiosyncratic costs and habituation under the term *relationship specific investments (RSI)* which is adopted for this model. Initial and rising fixed investment only delivers benefit when a consumer remains in a relationship, continuously reinforcing it.

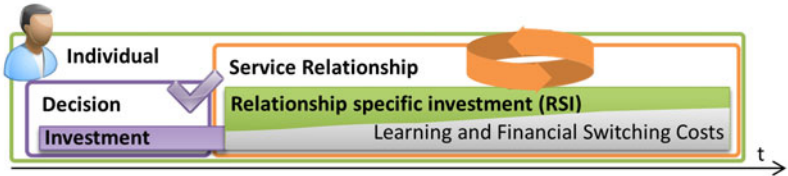


Figure 9: Process of Individual Level Mechanisms reinforcing Consumer Lock-in in a Service Relationship.

Figure 9 summarizes the process that consumers locked-in by individual level mechanisms are subject to. As time progresses, RSI rise and reinforce persistence in a case of cognitive dissonance. Mechanisms on the individual level are present in many contexts, both in goods- and services markets. They are thus less relevant for a path

dependent lock-in in service relationships because here the process is more social in nature. The next section discusses the social level mechanisms.

3.1.2.2 Social Level Lock-in Mechanisms

The inherent social component of consumption was shown in Section 2.2.2.3. It fits to the consideration of path dependence as a tapering social process (Sydow, Schreyögg, and Koch 2009). Consumers in service relationships are prone to the influence of social level lock-in mechanisms, particularly when they entail high contact and high customization (Lovelock 1983). Research on service co-creation supports this notion (Grönroos 2012).

The high level of contact in such relational services leads to *complementarity and coordination effects*, which were shown to be relevant regarding a social path dependent process. This section shows that they also work in conjunction with direct interpersonal relations in service relationships. Their interpersonal nature leads to the proposition that social level mechanisms play a particular role here.

Proposition 3.2: Social switching costs are the primary lock-in mechanism in service relationships with a high interpersonal component.

They were also shown to differ from individual level mechanisms in that they are perceived as less restrictive, positive barriers. Patterson and Smith (2003) found that switching barriers are a good predictor of customer retention in service relationships with the most variance explained by such social barriers, namely the *friendly relationship* and *special treatment*. **Social integration** is therefore introduced as the social level mechanism in the development of lock-in in service relationships. This includes perceived integration with the employees the consumer is in contact with, as well as the other customers present/relevant for the process.

While the *coordination effects* identified by Arthur (1988) aim at the aggregate market level phenomenon of network effects, they can be also be understood in terms of switching costs (Farrell and Klemperer 2007). On the individual level, an idiosyncratic “network” of people to coordinate with becomes relevant to the individual, a phenomenon that is relevant to network based marketing (S. Hill, Provost, and Volinsky 2006).

When interacting with the employees of a service provider, the type of service but also individual factors influence the potential for and level of integration. In its most extreme form, customers can be co-creators in the service relationship (Etgar 2007). In a relationship, *special treatment* by the provider employees can develop and reinforce

the lock-in to that relationship. The effects found do not only imply the importance of *coordination* on both sides of the relationship. A smaller fraction of variance in the propensity to stay was also explained by the *need to explain preferences*, *search costs* and *length of patronage*, all of which imply social coordination (Patterson and Smith 2003). This social adaptation and learning have been recognized as triggers of individual path dependence (Aversi et al. 1999).

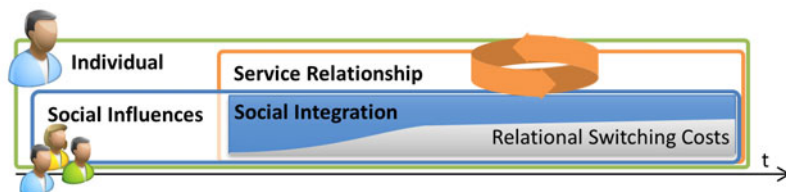


Figure 10: Process of Social Level Mechanisms reinforcing Consumer Lock-in in a Service Relationship.

Figure 10 summarizes the functioning of social level mechanism leading up to lock-in in services. Individual characteristics are an overarching factor in consideration of social level mechanisms as it is assumed that individuals differ in their susceptibility to *interpersonal influence* (Bearden, Netemeyer, and Teel 1989; Cialdini and Goldstein 2004). As time in the relationship progresses, interpersonal relationships form, leading to growing relational costs in case of exiting the relationship.

Social interaction with other consumers over the process is interpreted as *interactional complementarity*. While not as important as the customer-employee interaction, this dimension may be crucial for services where the individual experience depends on others and that are co-produced not only with the provider but also with other consumers. This social interaction can have varying dimensions, depending on the type of service delivered. It should be noted that it can also be negative and a cause of cognitive dissonance and switching instead of working as a barrier, if integration is lacking (Grove and Fisk 1997). The conceptualization here assumes positive social integration to work as a social level lock-in mechanism.

In summary, the processes in service contexts are complex because the fit and quality of a service can only be evaluated after experience. Decisions regarding services important to the consumer lend themselves for analysis regarding path dependence. They are made under uncertainty, in complex environments, follow heuristics, and evaluation is very limited before and even still limited after entry. It was pointed out that the social level can play a crucial role in both the decision and post decision

process in the form of lock-in mechanisms. This model is summarized in the next section.

3.1.3 Summary of the Theoretical Consumer Lock-in Model

It is likely that consumers in complex and important service relationships undergo a process that for some may end in the situation described in the introduction. This consumer lock-in phenomenon is however assumed to be limited, as only few consumers experience a lack of fit and even fewer may display signs of a path dependent process in the understanding of this model. Furthermore it depends on idiosyncratic individual traits and antecedents in the sense that individual history matters. Similarly, these aspects are context dependent and may differ depending on the considered service relationship. When confronted with cognitive dissonance due to a lack of fit of a service relationship with individual needs, the consumer can apply two ways of dissonance reduction.

1. Deliberately exit or switch a service provider, i.e. exit the process and leave the path. In this case, the highlighted lock-in mechanisms does not pose a barrier that was too high to be cleared by the consumer.
2. Stick to the process and reduce cognitive dissonance internally. The outcome is behavioral persistence in the service and adaptation of expectations and assessments of the service.

Such behavioral persistence in the service relationship leads to lock-in (i.e. Johnson, Bellman, and Lohse, 2003). In case of lock-in, individual assessments are expected to stabilize (*Phase III*), leading to an intention of persistence. In this phase, consumers can display bias in their evaluation of their decision and satisfice, as preferences evolve along the way (Aversi et al. 1999) and are subject to individual bias. In this phase the lock-in mechanisms are still in effect and rise but have crossed a critical point at which the individual evaluation turns into favor of the service relationship. In order to reduce *cognitive dissonance* (Festinger 1962), individual assessments like satisfaction and commitment normalize; leading into service consumer lock-in, as defined for this work.

Identification of lock-in to service relationships might prove difficult through ex-post analysis, as the phenomenon occurs potentially unaware of the consumer and dissonance reduction normalized evaluation. That is why this process model is developed to help identify the consumer lock-in process. Figure 11 illustrates this process that depends on *service context* and *individual differences* as it describes an

individual phenomenon. Furthermore, as elaborated in Section 2.2.2.3, individual differences and characteristics are relevant determinants of behavior which are here operationalized as personality traits. Other relevant individual differences have to be identified considering the decision context. Expectations and their evaluation are also included in the overarching segment as they differ individually and determine the evaluation process.

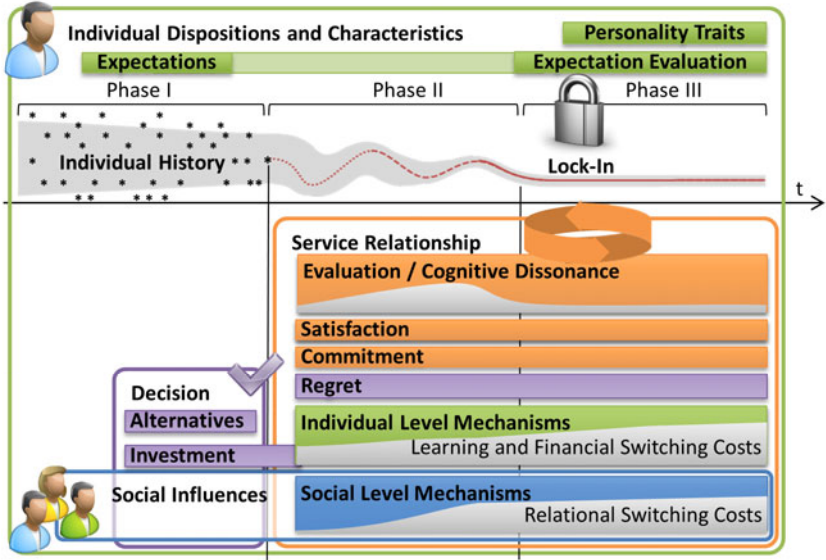


Figure 11: Theoretical Model of Factors and Mechanisms relevant for the Development of Consumer Lock-in in Service Relationships.

The individual background is relevant in the form of “history matters” since it led to the decision initiating the path. It also stays relevant, as it shapes the individual response to the experience and expectations. The phases are signified by brackets and the emerging path in red, starting with an initial decision. This focal decision is based on the premise of available **alternatives** and causing an idiosyncratic **investment**. The individual narrows down potential options in *phase I*, to the point of the decision. From here, the timeline moves on to *phases II* and *III*.

In the **service relationship** the individual encounters entrenchment, experiences the service, and evaluates this experience. In the consumer lock-in model this evaluation is unfavorable – the individual perceives a lack of fit with the service relationship along one or more evaluative dimensions. These lead to cognitive dissonance in *phase II* that

grows to a point where the individual is required to make a change to reduce dissonance. In line with Arthur (1988), **regret** can be considered a proxy for lock-in, even if satisfaction and commitment are average.

Adding to the initial investment, **individual level mechanisms**, habituation, learning, and financial switching costs grow over the process. These are incurred by all consumers in this service, not only the ones who become locked-in, and entail habituation and learning, as well as financial costs.

Social influences may be relevant for the process of reaching the decision, but distinct from the social level mechanisms, as explained in Section 2.2.2.3. The relevance and intensity of mechanisms on the described levels greatly depend on the service context. The **social level mechanisms**, relational switching costs, grow with integration with the provider employees and/or other consumers.

The presented generic model is applicable to various service contexts and can serve to model empirical investigation of the consumer lock-in phenomenon. When an individual service relationship process passes through the described phases and the mechanisms support the lock-in, this justifies referring to this as a lock-in in the path dependent sense. As mentioned, this model describes the process generically and must be adapted to an empirical context to serve as a foundation for research. In order to empirically test the model in a relevant context, the model is adapted in the following section.

3.2 Model Adapted to the Context of Higher Education

To this point, a comprehensive theoretical model of the process of consumer lock-in was developed, based on a combination and interpretation of existing theories. Propositions were developed to delineate the lock-in processes individuals may traverse in consumption situations. The final research question of this work requests empirical validation of the premise of the model and the research propositions:

RQ 4: How does the modeled understanding of the phenomenon unfold empirically in a consumer relationship that fits the properties of an individual path dependent process?

Section 3.2.1 discusses the relevance of this area of service provision and particularly the qualification of this empirical subject – customer retention – for interpretation as a marketing problem. The service relationship in this field heavily relies on co-creation and customer participation, in order to lead to a beneficial outcome. Relational influences are also relevant here and are discussed in the context of an educational co-

creation process. These aspects make it a likely context for the occurrence of individual path dependence. Section 3.2.2 evaluates the prevailing models for consumer attrition in the context of higher education and their connection to marketing research. Educational research with an individual process focus is related to the theoretical model developed for this work. It suits the service provision process in this area and is adapted accordingly. Special attention is paid to the phase II mechanisms that are relevant in this context and the process features that lead to provision of a longitudinal design suitable for capturing the process nature of the phenomenon inquired. To conclude, hypotheses are derived in Section 3.2.3, laying the groundwork for the empirical panel study that follows in the next section.

3.2.1 The Relevance of Student Retention in Educational Research

To answer the last research question, a process of a relationship between a service provider and a consumer is selected and empirically observed for the effects presented in the theoretical model. As stated in the introduction and refined over the theoretical section, consumer lock-in is likely to occur in important decisions that have consumption character: They are made in a market offering different alternatives, have financial implications and entail entry into a course of action with mechanisms that can lock individuals in. The occurrence as well as the empirical access to such decisions and their consumption processes in the real world is limited.

Over the course of the theoretical section, it became clear what types of decisions are characterized by the properties that promote path dependent processes. Examples for relationships with potential for consumer lock-in were provided throughout the theoretical section. A recurring example was *education* and more particularly *college enrollment*. As mentioned in Section 2.1.1, educational paths were used by Arthur (1988) to illustrate a sequence of action that may have a different cost and payoff structure and lead to individual persistence in a choice with an inferior long-run potential, leading to regret. His example referred to the path of becoming a lawyer as compared to becoming a doctor – a decision located in the area of higher education. This context is thus selected for empirical investigation. It is a process that provides potential for individual path dependence and is also accessible for empirical research.

The relationship between a university and its students is thus in the focus of this empirical section. The provision of educational programs in the field of higher education receives various framings, depending on the focus of a study and its conclusions. One of the most central aspects of *educational research* is assuring

student retention (Tinto 1975). The university as a *service provider* and the student as a *service consumer* operate in a market, making it necessary for universities to engage in marketing activities (Krachenberg 1972). These activities include, but are not limited to, advertising and personal selling, pricing and product development, in order to provide a satisfying outcome for the involved parties. The goal is to inform students about the products provided, attract students that fit to these products, as well as ensuring that the students successfully finish the process implied in the consumption of the product – the educational outcome. The products are degree programs where the terms of service provision process are set by the university. Higher education marketing is also becoming more and more important in assuring service quality (Tan and Kek 2004).

As universities are measured through success and dropout rates, the managerial activities involved in keeping dropout rates low as well as the research interest in the phenomenon of student retention are considerable (Tinto 2006). It has inspired a considerable line of research and affects fields like educational sciences (Cabrera, Nora, and Castaneda 1993), psychology (Thompson and Hrebec 1996), and economics (Oreopoulos 2007). Robotham and Julian (2006) examined the relevance of stress for retention and progression and call for a more longitudinal approach to research in this field. One line of research with a sociological focus identified prominent factors affecting decisions in higher education (Pascarella and Terenzini 1979; Spady 1970; Tinto 1975). The *social level* was identified as a central element in a first model of the individual process leading to withdrawal (Tinto 1975). Kember (1989) used this model to examine the longitudinal process in distance education. Some authors describe the direct student interaction effects as peer effects which were also found to affect academic performance (Hanushek et al. 2003; De Paola and Scoppa 2010). Lomi et al. (2011) studied the effects of social integration on performance in an educational setting and found that peer effects are relevant and co-evolve with individual behavior in the process. This makes the social level effects particularly relevant for this work in terms of lock-in mechanisms.

Success rates in this context have a real world dimension, as they increasingly become an indicator of political and societal accomplishment. The success rate of German students is measured by the German Federal Statistical Office (2013); in 2011 the average success rate of students who started their studies in 2003 was 74.3% but varied vastly depending on the field of study.

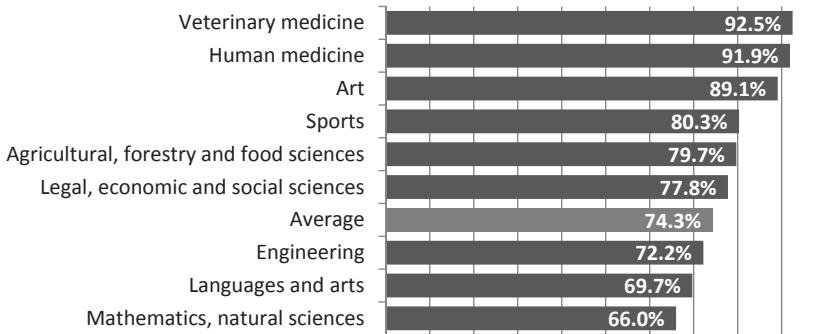


Figure 12: Bar Chart of Success Rates observed in German Students by Subject, issued by the German Federal Statistical Office (2013).

As Figure 12 shows, the Medical field rendered a high success rate, while Natural Sciences and Engineering were below the average. The fraction of successful students in the Business field amounted to 78.2% which means that more than 20% of the students in Business did not finish the studies they started in 2002 with a degree. It also needs to be noted that the data is irrespective of degree grade, only providing an illustration of the student *success* in the form of achieving a degree.

These numbers are reason for calls on behalf of programs and measures to increase retention. As Bean (1982) put it in his work on student attrition: “[T]he importance of improving retention rates may become more a matter of institutional survival than of academic interest” (p. 292).

Considering the focus of this work, the following aspects of the presented success rates deserves special attention: Among the almost 75% of students who – on average – finished their studies with a degree, there are bound to be students, who were in fact contemplating their chosen course of studies. As the decisions occurred under some degree of uncertainty, it seems probable that *individual lock-in* may have been responsible for some of these “successes”, with lock-in mechanisms making individuals stick to the course of the educational program. As these decisions entail entry into a co-creation process, this process must be analyzed accordingly. Tinto (2006) states that “if one wishes to develop a theoretical model of dropout from college, one which seeks to explain the longitudinal process of interactions that lead differing persons to varying forms of persistence and/or dropout behavior, one must build into the model sets of individual characteristics and dispositions relevant to educational persistence” (p. 93). Research identified the importance of student

retention led to a strategic redirection to marketing tools considering student behavior and experience, which will be considered more closely in the next section.

3.2.2 Higher Education Decisions, Processes and Lock-in

A decision in the educational context was selected for the empirical process as it is one that most people in the Western world face after finishing school, making it an *important* decision. On a general level, it is the decision about a career *path* and the process that follows it. Since a considerable amount of attention in educational research is paid to student decisions and student retention, the field of higher education was selected for the empirical inquiry. The selection was reinforced by the features of the market where *history matters* more than it does in most other consumption decisions. Theory suggests that a decision in this market is made under *uncertainty* and the *social process character* with *customer participation* is essential part of an educational path.

First the decision situation needs to be considered. Lazear (1977) describes it as a *production process*. The *consumer relationship properties* of students maintaining a study program becomes particularly evident when the decision is examined in Anglo-American studies: In these countries, the investment in a study program, apart from time and cognitive resources, is of fundamental financial value and has various stakeholders (Clayson and Haley 2005). Jacobs (2008) examined *the organizational path dependence* of universities in Germany and also refers to the commercialization of education in Germany and Europe. McCollough and Gremler (1999) promote an increased use of service marketing tools in university education, focusing on *student satisfaction*.

This work however focuses on individual path dependence and consumer lock-in in this context. Every path dependent sequence starts with the decision, following a legacy of previous decisions. The same is true and particularly apparent for decisions in the context of educational decisions. Higher education services have some *search*, but particularly *experience* and *credence properties* (Darby and Karni 1973), so that search before the choice is limited. Moogan, Baron, and Harris (1999) applied the consumer decision process to students' decisions in higher education and found that students find these decisions *complicated* and *risky*. Furthermore, these decisions depend on individual legacy: If an individual performed well in high school, on standardized tests, or in a preceding program, more alternatives are available.

As Milesi (2010) points out, entry characteristics have a potential to lead to *path dependent decision making* in future study choice. This means that *some* students starting a new program are bound to experience a lack of fit of their choice with their interests, over the course of their studies. Gold (1988) found that around 25% of new students experience this misfit, in the form of “*tendency to withdraw*” (p. 120). This experience occurs during the service co-creation sequence and is reflected by considerations about the service relationship to the provider. It can be subsumed under the terms *cognitive dissonance* and *regret*, which can develop from a comparison between the choice and a forgone alternative (Tsiros and Mittal 2000).

Moreover, the choice set in the market for graduate education is very limited. It is constrained by many factors such as entry barriers, individual willingness to relocate and invest, previous academic performance, and academic interests. Rankings, program websites and personal accounts can give an initial orientation but the individual adequacy of a program can only be fully evaluated after taking part in a program for some time. The aspect of *uncertainty* about the fit and outcome of the described consumption behavior is covered by the concept of prospect theory (Kahneman and Tversky 1979).

Furthermore, the individual chooses to pursue vocational training or higher education, they enter a path that entails exclusivity: Only this one path can be pursued at a time. Then the individual needs to evaluate if their focal choice is suitable for them or not, but cannot try and evaluate different paths or even alternatives simultaneously. The choice also implies a great investment. This investment varies individually, depending on the alternatives that were available, for instance admissions to other universities and other investments in the choice.

The initial *decision* here is exclusive and displays the limitations relevant for lock-in; behavior regarding the *co-creation* process is also highly relevant for both the provider and the consumer of the program. Providers in this market – universities – deliver *educational services* that require their consumers to commit to a study program for a set amount of time in order to earn a degree. Education gives a strong case for a service co-creation relationship that entails a sequential commitment between buyer and seller. Furthermore individual *investments* of time and money are necessary, along with the opportunity costs compared to investing the time in a career. Additional idiosyncratic investments include a potential need to relocate and giving up admissions to other programs. The last point also makes clear that the decision is *exclusive* and *limited* to available admissions, also dependent on investments in education previous

to the entry into higher education. Recent drop-out rates show that the offered service displays *experience good* features.

Once a decision is made, the service relationship is entered. The concepts developed for the theoretical model fit into this process as it exhibits the long-term service consumption process characteristics implied in the model. One notable model considered the longitudinality of the process and the relevance of individual history for the drop out decision (Spady 1970). This conception motivated the development of the model by Tinto (1975), shown in Figure 13. This model systematizes the issue of drop out and describes it regarding two dimensions of student commitment.

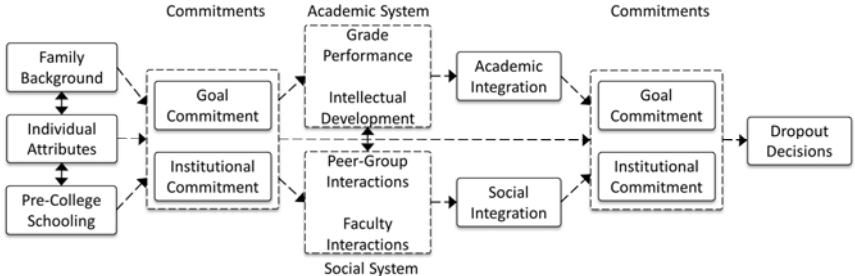


Figure 13: Conceptual Schema for Dropout from College by Tinto (1975), p. 95.

This model considers a development of **individual** and **goal commitment**, depending on individual attributes, from entry into the process. These attributes subsume individual demographics and history as well as personality and expectations. Interactions with the academic and social systems over the course of the process influence both dimensions of *commitment* and lead to changes in the commitment that affect the drop-out decision.

As Tinto (1975) concludes, either low institutional commitment or low goal commitment can lead to **drop out decisions**. Even in a case of low integration and institutional commitment, a case of high goal commitment may occur and *“the individual might decide to “stick it out” until completion of the degree program or until he is forced to leave because of insufficient levels of academic performance”* (Tinto, 1975, p. 96). Consumer lock-in may be an explanation of this phenomenon.

The psychological model of college student retention by Bean and Bogdan Eaton (2000), as it is depicted in Figure 14, was based the work by Tinto (1975). It further elaborates on the relevant cognitive aspects of the subject of inquiry. In line with phase II of the theoretical model developed for this work, **entry characteristics** are an overarching factor in the process. Over the process, interpersonal interactions lead to

an evaluation of social integration. This perceived integration is differentiated by *academic integration* and *social integration*, referring to integration with personnel and other customers in the process. These affect *institutional commitment*, which in turn is assumed to affect intention and behavior of persistence.

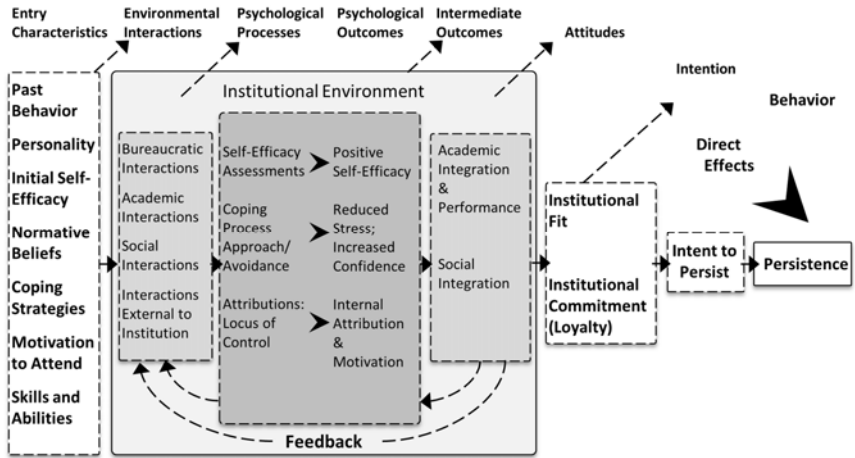


Figure 14: Psychological Model Of College Student Retention by Bean and Bogdan Eaton (2000).

Both models’ insight supports the process notion described for path dependent processes in service relationships in the selected context. For German universities, Georg (2009) analyzed individual and institutional factors that affect dropout and found that weak commitment to the course of study in general or the field of study in particular were major drivers of dropout decisions.

While supporting the dichotomy between goal and institutional commitment, he also supports the notion that context factors and individual factors influence persistence decisions. It is reasonable to examine the differences between students that persist in their course of study for these differences as well, as this work proposes.

The described phenomenon is also subject of research with a marketing focus. Kotzé and Plessis (2003) propose a model for students as co-producers of value in an educational service setting in universities, with participation and organizational socialization determining *satisfaction*, *perceived quality*, *affective commitment*, and ultimately *loyalty*. Hennig-Thurau, Langer, and Hansen (2001) refer to the relational nature of the service and the co-creation that necessitate relationship management and a deeper understanding of student loyalty and the drivers of service quality.

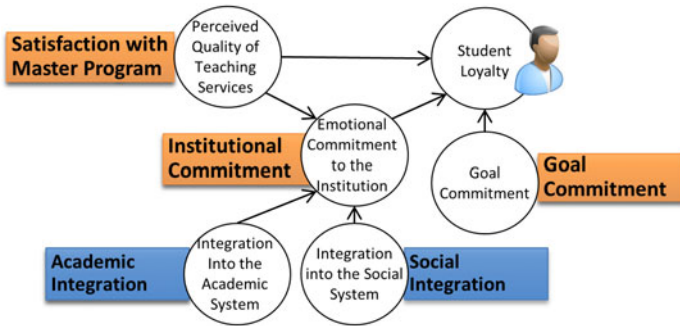


Figure 15: Relationship of Factors affecting Student Loyalty identified by Hennig-Thurau, Langer, and Hansen (2001) Matched with Factors Relevant for this Work.

The researchers found that perceived quality of teaching services, which can be described as a proxy of *student satisfaction*, affects both institutional commitment and persistence. Likewise, as shown in Figure 15, **academic** and **social integration** were found to increase *institutional commitment*, measured as **emotional commitment to the institution**. For their work, Hennig-Thurau et al. (2001) found educational research to be fruitful for service relationship considerations and focused on the described dimensions of *commitment* as prerequisite of student retention, framing retention as student loyalty. Helgesen (2008) summarizes the importance of relationship marketing for enrollment and retention with a focus on the creation of value for students. His work similarly puts loyalty to the front and finds that service quality is the most important factor influencing satisfaction, which in turn most strongly affects loyalty. Both these studies however failed to examine the phenomenon longitudinally.

Hennig-Thurau, Langer, and Hansen (2001) differentiate between the emotional and cognitive dimensions of institutional commitment. This work bases its interpretation on the more general construct by Tinto (1975), who implies longitudinality and treats commitment dimensions as a prerequisite of intention and persistence. It has been foundation of other longitudinal works in this field as well (e.g. Gerdes and Mallinckrodt 1994; Mangum et al. 2005). Cognitive commitment can be understood more in terms of learning effects and investment. Combining these different understandings, Okun, Karoly, Martin, and Benschoff (2008) referred to institutional commitment as a *student's commitment to the specific institution in which he or she is enrolled*, while goal commitment is *students' commitment to their educational and occupational goals*. Their research also considers the interactional dimension of loyalty, stating that as “*students become more academically and socially integrated*

into the institution, goal and institutional commitment should increase, and, in turn, the likelihood of premature departure should decrease” (Okun et al., 2008, p. 510). They specify that full integration is not necessary and that the two types of integration can be interpreted as compensatory. Their study found that interaction is one of several relevant reasons for students to leave a given institution. This supports the model in that social level mechanisms are paramount in supporting consumer lock-in.

The different approaches to the student retention phenomenon show that the relational level is particularly important in influencing students’ intentions in an educational environment. While investment and effort are implicitly considered and also substantial in these services, the relational dimension appears to be determinative in forming commitment.

3.2.3 Summary of Context Adapted Model and Research Hypotheses

This section showed that the process of university education is a distinct type of service relationship that uniquely conveys relational process features and is considered in research in different ways. In order to empirically examine the individual cognitive process going through a program in higher education, the general theoretical model was adapted according to theory from educational and marketing research with a focus on the topic of student loyalty, retention and perceptions in educational services. Figure 16 shows the adapted model of consumer lock-in in higher education for this work.

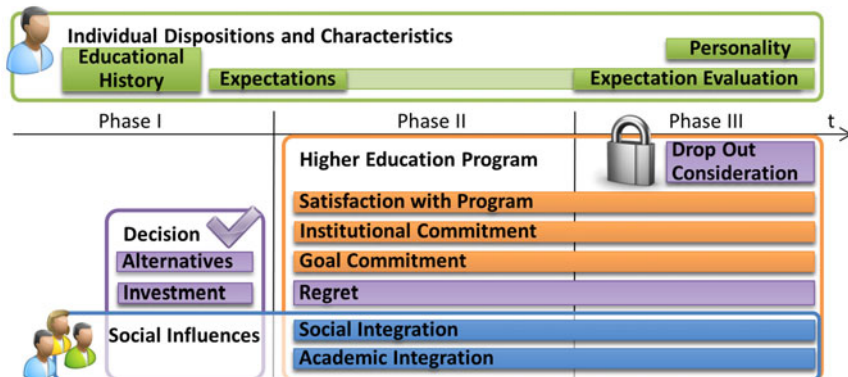


Figure 16: Adapted Theoretical Model for the Context of Higher Education.

Universities invest a lot in assuring a good fit of the students and the program both in terms of suitability and ability. Next to marketing activity, a wide array of factors can come into play for consumers when applying for programs, which is in this model subsumed under educational history. Other relevant factors are individual preference for consistency, which may work as a factor facilitating path dependent behavior within the process and susceptibility to social influence, potentially facilitating the relevant of social level mechanisms.

Entry into an educational program at a university depends on both individual history and characteristics. The decision is made under uncertainty but with great expectation and is complex. Social influences may affect this decision, which is ultimately made exclusively from a set of alternatives – the admissions an individual received. If only one admission was received, the individual decision is made between pursuing the program at hand and following another path. Other individual properties may be added to the empirical inquiry.

This model is a foundation for empirical examination of consumer processes for lock-in in this context. To analyze the occurrence of consumer lock-in, the criteria for a path dependent process need to be met. Based on the adapted model the decisions in the higher education context are empirically analyzed for their potential for a path dependent outcome. The theoretical reasoning suggests that a decision in higher education exhibits features relevant for individual path dependence as an outcome. This is why the context was selected. But it can also be empirically verified by asking respondents about the mentioned decision aspects relevant for their individual decision.

Next the *consumer lock-in* outcome is analyzed. The fact that consumer lock-in is likely an unconscious state makes it difficult to grasp, because it cannot be easily inquired by asking individuals after the process is over. While some consumers might be somewhat aware that they are locked-in to a service relationship, others may respond to be satisfied, although their reasons for this satisfaction is lock-in rather than positive evaluation. One proxy for lock-in is cognitive dissonance reduction, which may be evident in consumers who tended to drop out of the program in phase II, but instead adapted their assessments.

H1: Consumers who report a tendency to drop out of the program display decreased (a) satisfaction with the master program, (b) commitment to staying with the institution, and (c) commitment to the goal of finishing a master's program. They (d) also exhibit regret regarding the program.

Similarly, expectations may serve as a proxy for this tendency. Students develop them before the entry into the program and then evaluate them afterwards.

H2: Consumers who report that their expectations were not met by the program (a) satisfaction with the master program, (b) commitment to staying with the institution, and (c) commitment to the goal of finishing a master's program. They (d) also exhibit regret regarding the program.

Analysis focuses on these hypotheses and derives explanations for this tendency to drop out from the dimensions that displayed cognitive dissonance. The process of evaluation can be analyzed for the occurrence of *cognitive dissonance* along the modelled evaluative dimensions of **satisfaction** with the program, **institutional commitment**, **goal commitment**, and **regret**. Students who went through a phase of negative evaluation after the decision that recovers subsequently are potential candidates for *consumer lock-in*. Quantitative analysis considers the influence of evaluation over the course of the program and matches it with self-reported drop out tendency and unmet expectations as a sign of lock-in.

The individual characteristics are examined for their potential to differentiate whether students are locked-in in the process. In addition to personality, consumer susceptibility to interpersonal influence and preference for consistency were included for analysis as potentially relevant individual traits. The theoretical reasoning leads to the following hypothesis.

H3: Individual personality properties are relevant in explaining potential lock-in (a), with increased preference for consistency (b) and increased susceptibility for social influence (c) facilitating lock-in.

In a last step the relational lock-in mechanisms are inquired. The theoretical analysis of the context showed that integration on two levels is particularly relevant in higher education programs. The model suggests that integration works as a social level lock-in mechanism by inducing relational switching costs. This points to the last hypothesis:

H4: (a) Social Integration and (b) Academic Integration are relevant for student's lock-in to a program.

Considering their relevance as a reinforcing lock-in mechanism, they particularly need to be examined for their effects on potentially locked-in students. These hypotheses analyzed in the empirical section, following the introduction of the selected scales and longitudinal study design. Both qualitative and quantitative analyses aim at testing

these hypotheses, but also examine the process properties in individuals with regards to the process and phases of lock-in proposed in the model. These go beyond the testable hypotheses, and rely on qualitative visual examination.

4. Longitudinal Study with Service Consumers in Higher Education

In the first step the adapted model of consumer lock-in in higher education is transferred to the empirical setting in Section 4.1. Following a qualitative evaluation through interviews, survey design and scale selection are discussed. As shown in Section 3.2, educational service provision and student retention have an extensive line of research that provided some of the selected scales for the empirical study.

In the second step, the survey results are reviewed and discussed in Section 4.2. In the study, students report on their experience along the evaluation dimensions in a longitudinal survey over six waves of inquiry. The results of this inquiry are used to examine them for their support of the hypotheses developed in Section 3.2.3 and the model understanding of consumer lock-in. The analysis combines quantitative methods and qualitative investigation to achieve these goals. The empirical section concludes with an evaluation of the hypotheses and their implications for the consumer lock-in process model.

4.1 Study Design for Examination of the Adapted Consumer Lock-in Model

The empirical part of this work explores the conception presented and elaborated in the theoretical model of consumer lock-in processes in a real world service setting. For the empirical application of the consumer lock-in model developed for this work, it was adapted to the context of the selected service relationship, as presented in Section 3.2.

To examine consumer lock-in as structured in the adapted model, a longitudinal panel study with university students was conducted. The study subjects were students in the first semester of the 2014 class of master students in a business program at Freie Universität Berlin (FUB). It is a consecutive program, so it requires applicants to hold a Bachelor's degree or equivalent in business. The program leads to the degree "Master of Science in Management and Marketing", so these study subjects are the main areas of the curriculum.

As a basis of inquiry, questionnaires were developed to inquire the relevant aspects of the model. Semi-structured interviews with former students in the program were conducted to identify relevant aspects in line with the model. Central outcomes of the interviews are summarized in Section 4.1.1. The design and methodology are discussed in Section 4.1.2. Next the scales for the questionnaires are presented and

described. Section 4.1.2.1 shows the scales inquired once as they measure stable assessments. Section 4.1.2.2 presents the scales inquired longitudinally, which are assumed to develop over the process.

4.1.1 Qualitative Pretest Interviews

Four semi-structured interviews were conducted as a pretest for the main study. The interviewees were students who were in former cohorts of the Master’s Program that is subject of the empirical inquiry and finished it with a degree. One goal of this pretest is examining of the effects presumed to play a role in the model for individual lock-in with regards to the decision and interpersonal aspects. Another goal is supporting the development of a relevant explorative survey for the longitudinal study. An interview guideline was developed covering the relevant aspects of the model. To anonymize the interviews, the interviewees received letters from A to D, as shown in Table 21.

Name	Origin	Description	Reference
Interviewee A	Outside of Berlin	<i>Satisfied student, choice motivated by city</i>	IA (2012)
Interviewee B	Outside of Berlin	<i>Insecure about choice, low social integration</i>	IB (2012)
Interviewee C	Berlin	<i>Satisfied student, choice motivated by subject</i>	IC (2012)
Interviewee D	Berlin	<i>Mostly satisfied, socially integrated student</i>	ID (2012)

Table 21: Overview of Interviewees for Qualitative Pretest for Empirical Survey Design.

First the interviewees were asked about their *history* in phase I of the process – how they came about studying business, their background regarding studies in their Bachelor’s program, as well as their decision for a master and the perceived quality of the process in this particular Master’s program.

About the decision process in phase I and the rationale to continue the path they had entered in their Bachelor’s studies, one interviewee said: “*Yes, for one thing, you want to have a reasonable job, right? Have a good foundation for later, a good educational base, so I thought business studies is a good thing. [A degree] from a university, that somehow sounds better. Then, yes Master’s, a Bachelor’s is just not a hundred percent widely recognized by everyone, so I thought a Master’s, which only takes two years anyway. And then I saw that there’s [...] a nice semester abroad in it*” (IC, 2012, 00:14:22-1). The same argument for the pursuit of a Master’s degree was given by another interviewee, who reported receiving the following academic advice: “*The Bachelor’s is not yet recognized. [...] Of course, it is a first professional degree, but we would always recommend you to get a Master’s. Simply because it’s more of an equivalent to a diploma*” (ID, 2012, 00:16:41-9).

The relevance of origin became apparent for the individual **investment** dimension. Two of the interviewees lived in Berlin before and had also studied at universities in

Berlin getting their Bachelor's degree. One of them described it as “[...] *cost reasons. Theoretically I would have been flexible, but there was just clear, it is always easier to stay in the town where you grew up, where you have friends where you have a family. Where the costs are low of course, I could continue to live with my parents [...]*” (ID, 2012, 00:06:13-2).

While the individual investment accordingly can be assumed to be low for students who lived and studied in Berlin before, it is higher for students who have to relocate. For the interviewees from outside Berlin, the *city* – next to program features and the mandatory semester abroad – was an important attractor: “*Then of course I still looked for alternatives and Berlin - as I have found it [the Master's program] - appealed to me very very much, because, first because you do not have to decide whether to focus on either marketing or management. And then because of the semester abroad and of course because of Berlin*” (IB, 2012, 00:09:25-7). Interviewee A made the point even more direct: “*But I did not go by reputation or something like that, but by city. They had to have more than a critical number of people to end up on my short list, or just stand out somehow. And those were just not incredibly many, but Berlin, Hamburg, Munich, Stuttgart, I think*” (IA, 2012, 00:15:02-1). All interviewees reported that they had applied for several Master's programs and had also received admissions for more than just the program analyzed in this study. This supports the notion of availability of **alternatives** and comparison.

The interview then focused on the interviewees experience within the program. When asked about the interaction with other students, it was described as competitive and cooperative. There was support for the notion that this was an individually relevant aspect. “*There were very many talented and intelligent people. But I also always perceived it as very competitive and demanding, which was not necessarily improved by the mechanisms that were established in the program*” (IA, 2012, 00:25:52-9). This shows that the program structure was perceived to encourage competition among students, but also increase the cohesion. Social cooperation also developed in working together to alleviate the workload, as Interviewee C describes. “*It was a mixed pool [of students], group cohesion was indeed relatively high.*” (IC, 2012, 00:21:18-3). Integration was also described as a driver of persistence: “[It] was probably the best thing that perhaps made all of us feel even more [...] that you do not want to give up. For sake of the people alone” (ID, 2012, 00:23:02-2). This was not the case for every student however. “*Definitely, the group feeling develops. But as far as friends go, I developed closer friendships during my Bachelor's. For me, the time in my Bachelor'*

studies was my student hood, if I remember it later, because of [...] leaving home” (IB, 2012, 00:16:00-6).

Lastly, the interviewees were asked about their evaluation of their experience and consideration to drop out, which led to identification of Interviewee B as a particularly interesting case. The *uncertainty* of the decision and the process also became clear: *“I did not think about dropping out [...] but I really thought in the second semester about whether I would do it again. And then sometimes I thought, maybe not. And I never had had that before in life that [...] I really thought: Would you do it again? And then maybe even say: No, if I had known that I would not have done it”* (IB, 2012, 00:22:49-8). One facilitating factor mentioned for this consideration was the work load in the program.

The student was satisfied with the level of **academic integration**: *“It varied from professor to professor. But I would not - so - it was not that it would have struck me negatively. That I would say: yes and that was really bad, or so, no”* (IB, 2012, 00:26:03-3), while the interviewee suggested a lack of **social integration** with the other students as also mentioned before: *“So I found this competition which prevailed there [among students], the pressure of competitive pressure that - so I did - or this is very very important for me, the environment, the people that I feel comfortable, that it is somehow amicable and harmonious. And that has sometimes been lacking and that then sometimes added to the stress”* (IB, 2012, 00:26:23-1).

The workload intensity was confirmed by the other interviewees, all of which seemed to have a positive experience in academic integration: *“So of course that was always very integrated, cooperative and was also very encouraging to their own contributions and presentations. And yes presentations had to be kept anyway, so was very intense and much more intense than other universities”* (IA, 2012, 00:28:54-7).

All in all, the individual decision processes leading these students to the Master’s program that is subject of the empirical inquiry were similar and complex. They also faced choice from alternatives with varying attractiveness. While the individual experience in their Bachelor’s studies differed, they shared a desire to continue their studies in a Master’s program. Some did internships or even worked in the meantime, others went straight to the process of application. While individual investment in the choice differed, the subject of the programs, location, and the semester abroad that is part of the program were mentioned as factors that influenced the choice.

What followed the decision were evaluative processes that led at least one student to consider dropping out of the program, as expectations were not met. The integration

on the academic and social level were perceived differently, but played a role nonetheless.

4.1.2 Survey Design and Analysis Methodology

The consumer lock-in process model was adapted for the service relationship context experienced by consumers of higher education and is explored with students in this program. As a method of inquiry, an explorative longitudinal panel study approach was selected to examine this conception empirically. The respondents received questionnaires developed for quantitative analysis that also included explorative elements. This method allows for analysis of the process as it progresses and provides a unique insight into the cognitive development of service perception and evaluation in the individuals.

An advantage of the longitudinal methodology is the in situ capturing of human behavior by examining the same individuals over a period of time (Hsiao 2003). This way, the consumers' – hereinafter referred to as students – assessments can be inquired at the moment of their service experience and are not skewed like ex post surveying. Through regression analysis with fixed effects models, individual and time fixed effects can be isolated and interpreted to support the identification of locked in individuals. This approach serves to better understand how the process unfolds on the individual level and over time. A better understanding of the process nature of lock-in will help identify and explore the lock-in process phenomenon.

Due to the longitudinal nature of the continuous data, fixed-effects regression analyses in this case have students and waves as independent factors, leading to a form of dummy regression common in panel studies. The methodology thus allows for *individual heterogeneity*, provides more *informative data* and allows for analysis of *process dynamics* that would not be visible in cross sectional studies (Hsiao 2003). In this fixed-effects model, each individual and each time point has a fixed effect compared to the baseline. The baseline in this case is the average results in the continuous measures in Wave 1 of the inquiry. For the fixed effects analysis, an average response was added to the longitudinal data sample for analysis. This methodology is common in panel studies like this one, as it allows for the analysis of significant individual results considering the timeframe of the study (Hsiao, 2003, p. 30). This method enables to consider the individual results that stay constant over time and the longitudinal results that stay constant over all individuals. It helps identify individual evaluations and attitudes different from the mean and is generally used in

analyses that aim at finding individual differences rather than random effects that extrapolate to a greater population (Hsiao, 2003, p. 43). For the latter, the sampling method and sample size of this study would be inadequate. Due to this characteristic of the inquiry and the limited number of respondents, quantitative analysis of the data is in further steps complemented by qualitative analyses of group and individual results to reveal in depth information about students regarding the experience process in the service.

Since the conducted empirical study is explorative in nature, a variety of single inquiry and additional measures were included to paint a more complete picture of the individual experience process over the course of the first semester, where all students experience basically the same service process but have idiosyncratic experiences. The complete scales are also described in depth in Appendix B and C, including wording, item order, and translation used for each measure. All scales were selected from previous research, in order to assure reliability. It must be considered however that the questions may shape the answers (Schwarz 1999). That is why this work relies on measures used previously and the main used instruments of inquiry as well as the context are described as detailed as possible in the following sections.

4.1.2.1 Main Single-Inquiry Measures

The main measures of single inquiry are measures that are assumed to be stable aspects of the individual and are thus only inquired once. They include **individual characteristics and dispositions**, as well as aspects of the **decision**, as shown in Figure 17.

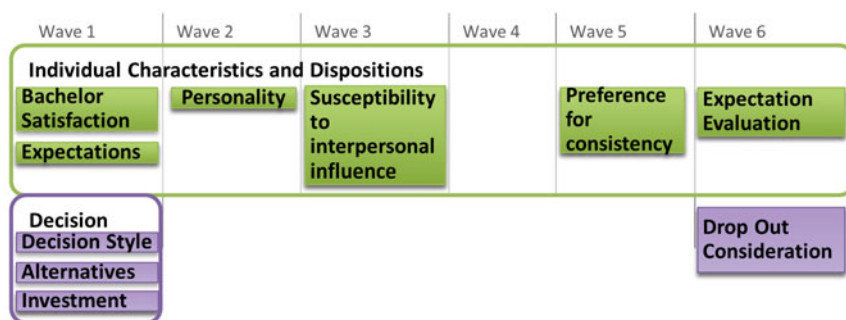


Figure 17: Graphical Overview of Single Inquiry Elements over Waves.

The individually relevant history leading up to the decision is dominated by the preceding Bachelor's program. **Satisfaction** was identified as an important evaluative

measure over the course of the process, so satisfaction was also measured regarding the general evaluation of the experience in the Bachelor's program. It was thus inquired for both the individual educational history in form of overall satisfaction with the Bachelor's program, as well as in form of a continuous measure regarding the current satisfaction in the Master's program. The latter is discussed in the next section; the used scale however is equivalent. It was drawn from previous research on the relationship of student satisfaction and student loyalty in a service marketing context (Kindlein and Schwaiger 2012; Kindlein 2012).

Additionally, students were asked whether they had considered dropping out during their Bachelor's program and whether they had acted on this consideration – i.e. applied for alternative programs or actually switched. Furthermore, the student's **expectations** were inquired regarding the Master's program compared to their Bachelor's program. The five dimensions of expectations were derived from the work by Appleton-Knapp and Krentler (2006), who examined the relationship of student expectations and satisfaction. What is particularly interesting about this study is that they found that expectations measured before the program differed from **expectation evaluation** measured at the end of a term, suggesting hindsight bias.

In Section 2.2.2.4 it was argued that individual characteristics are used to explain consumer behavior and subsequently it was outlined that it may also explain some of the locked in behavior in consumers. Individual differences affect decision making and behavior within consumption processes and some dimensions were identified that might influence the tendency to end up in lock-in. Individual differences were identified as an important overarching factor that might – next to context – explain individual tendency to remain locked in.

Three individual trait measures with seven dimensions were selected for this empirical study. In order to inquire individual differences, personality, susceptibility to interpersonal influence, and preference for consistency were selected as measures. The student's **personality** was measured by means of the ten item personality inventory (TIPI), measuring the big five personality traits (Gosling, Rentfrow, and Swann 2003). These are *extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience*.

The student's **susceptibility to interpersonal influence** was measured by means of the accordingly named consumer susceptibility to interpersonal influence (CSI) scale. The scale was developed by Bearden et al. (1989) to measure what is assumed to be an idiosyncratic individual trait. It is describes as the willingness to conform the

expectation of others regarding consumption decisions but also the tendency to consumption related learning from others. This influence from others is considered an important determinant of individual behavior, as described in Section 2.2.2.3. While the scale inquires normative and informational influences on purchase of consumer goods and brands, it is the only scale available that focuses on the interpersonal influence level. It was thus employed to measure this trait, which can be assumed to be a trait that also applies to behavior within a consumption process in services.

Another individual trait that could be relevant for individual persistence in such a process is individual **preference for consistency** (PFC). As R. Cialdini, Trost, and Newsom (1995) describe, need for consistency is relevant for the cognitive dissonance model by Festinger (1964), where individuals feel the need to align their cognitive assessments with their actions to avoid appearing inconsistent. Cognitive dissonance is also an important premise of the consumer lock-in model, so preference for consistency may also be explanatory in students' dissonance reduction efforts.

Next to the individual history and characteristics, factors with more direct decision relevance were inquired. The Situation Specific Thinking Styles (SSTS) Inventory by Novak and Hoffman (2009) is used to examine individual students **decision style**. This inventory inquires if the information gathering and processing regarding the decision for the master's program occurred by *rational* or *experiential thinking*. Consumer behavior suggests that for complex decisions, like the one in this empirical example, more rational thinking styles are used.

The previous section suggested the importance of **alternatives** in the decision situation as well as individually necessary **investment** into the choice and its consequences. The former were directly asked in terms of the applications for Master's programs sent out by the student, the latter in terms of location where the student lived in high school and where they received their Bachelor's degree. Relocation effort was then calculated into a four level score from low to very high, as shown in Appendix B. Alternatives are inquired and presented in absolute numbers.

The rationale of consumer lock-in is that individuals are potentially unaware of their adaptation of attitudes to a process. Phase II of the process is in these cases a situation of cognitive dissonance which is signified on the evaluative level. Here the individual may consider dropping out, which may be dismissed subsequently. This is why **drop out consideration** at some point over the course of the Master's program was inquired. If consumers are still in the process in wave 6 but considered dropping out over the course of the process, this is a possible proxy for consumer lock-in. Students

were asked directly whether they considered dropping out, and in case they did, if they actually sent out applications for other programs.

Model Element	Construct(s)	Item(s)	Description	Author(s), year
Individual Characteristics	Satisfaction Bachelor	9	<i>Student satisfaction scale</i>	Kindlein, 2012
	Expectation and Expectation Evaluation	5 / 5	<i>Pre and Post Student expectations</i>	Appleton-Knapp and Krentler, 2006
	Personality	10	<i>Ten-Item Personality Inventory - TIPI</i>	Gosling et al., 2003
	Consumer Susceptibility to Interpersonal influence (CSI)	12	<i>Willingness to conform with others' expectations</i>	Bearden et al., 1989
	Preference for consistency (PFC)	18	<i>Tendency to behave according to previous commitments</i>	Cialdini, Trost, and Newsom, 1995
Decision	Decision Style	20	<i>Situation Specific Thinking Styles</i>	Novak and Hoffman, 2009
	Alternatives	1	<i>Number of Applications and Admissions</i>	-
	Investment	2	<i>Relocation effort</i>	-
	Drop Out Consideration	1	<i>Direct Question</i>	-

Table 22: Summary of Single Inquiry Measures.

This concludes the single inquiry measures included in the empirical study over all six waves. Table 22 provides an overview of the items and the underlying constructs measured. For the empirical inquiry, the items were translated into German. The detailed items and translations, as well as an overview of the most important individual results are provided in Appendix B. The next section discusses continuous measures that were included in the study.

4.1.2.2 Main Continuous Measures

The main continuous measures comprise the longitudinal aspect of the study, as they were inquired repeatedly over the six waves of the empirical inquiry. This is visualized in Figure 18. The most important measures are detailed hereinafter; additional continuous measures inquired are provided in Appendix C, along with translations and question order for all inquired constructs.

The first continuous construct is individual **regret** regarding the decision to enter the service relationship. It was inquired by means of the regret experience measure (REM) scale. Creyer and Ross (1999) developed this multi-item scale in order to study the effects of regret on subsequent behavior, where they showed that different outcomes lead to different levels of regret. They based their scale development on *Regret Theory*

(Bell 1982) and differentiate between *general regret* in the form of a wish of having done things differently and *self-recrimination* or *self-blame* in the form of a belief that the original decision was already wrong at the moment of choice. Since regret evaluations may also be subject to cognitive dissonance reduction, this measure was included as a continuous measure.

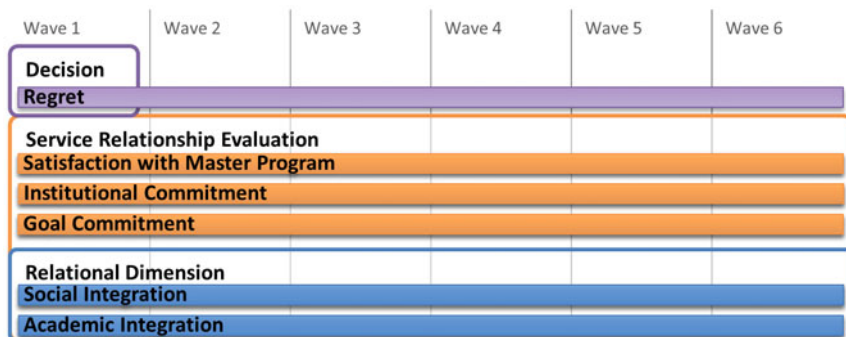


Figure 18: Graphical Overview of Continuous Inquiry Elements over Waves.

The same is true for the continuous inquiry of **satisfaction** with the Master’s program. The scale used for this measure was discussed in the previous section, as the same scale as for Bachelor’s satisfaction is used. It is adapted in wording to inquire not the satisfaction with the past experience, but the current perception at the time of inquiry.

Model Element	Construct(s)	Item(s)	Description	Author(s), year
Decision	Regret and Self-Recrimination	8	<i>Regret Experience Measure (REM)</i>	Creyer and Ross, 1999
Evaluation of Service Relationship	Satisfaction Master	9	<i>Student satisfaction scale</i>	Kindlein, 2012
	Institutional Commitment	3	<i>Commitment to FUB</i>	Okun et al., 2008
	Goal Commitment	3	<i>Commitment to finishing Master’s degree</i>	Okun et al., 2008
Relational Dimension	Social Integration	5	<i>Integration with other students</i>	Okun et al., 2008
	Academic Integration	5	<i>Interaction with lecturers</i>	Okun et al., 2008

Table 23: Summary of Continuous Measures.

Next, the dimensions of commitment are inquired. Based on the reasoning from educational research, this evaluation was differentiated into **institutional commitment** and **goal commitment**. Okun et al. (2008) provided scales for both dimensions of commitment in their work, where they examined student intentions. They were also interested in the relevance of integration and inquired relational dimensions, so the

scales for perceived **social** and **academic integration** were also taken from their work. The measurement of goal commitment aims at the general intention to continue university education, while institutional commitment inquires commitment to the particular institution – in the case of this work FUB. The integration dimensions inquire satisfaction with and quality of the interactions with faculty members and other students in the program respectively. In Table 23 the main continuous inquiry measures are summarized.

4.2 Overview, Analysis, and Interpretation of Results

The following sections provide an overview and extensive analysis of the results from the empirical panel study. First, Section 4.2.1 provides an overview of the results and the basis of further analysis. A particular focus is on support of the notion that the decision situation is in fact one that was modelled to be prone to consumer lock-in in the process. Section 4.2.2 elaborates the aggregate analysis of the different process features that were observed over the longitudinal inquiry. Particular focus is on the prediction of interdependence of the evaluation measures. Based on these findings, individual results are examined in Section 4.2.3, where the fixed-effects individual level results are examined for support of the process notion of evaluation. Then the groups identified as potentially locked in are examined for commonalities. It proceeds to more closely examine the lock-in mechanism identified relevant in this context: the social and academic integration dimensions. Section 4.2.4 summarizes the empirical findings and their support of the hypotheses that were developed in Section 3.2.3 and the general model notion.

4.2.1 Overview and Analysis of the Entry Decision

As the goal of the study is examining the individual process of evaluation, the longitudinal study consisted of six time points for inquiry, each about 3 weeks apart. The questions focused on the service provision process in the first semester. Each wave of inquiry is presented in a column with boxes depicting each scale.

An overview of the complete operationalized research design of the longitudinal empirical study is presented in Figure 19. The waves of inquiry were conducted with approximately 3 week distance. A semester Christmas break and New Year's Eve were part of the schedule in between waves 3 and 4, which explains the longer temporal distance between these two inquiries.

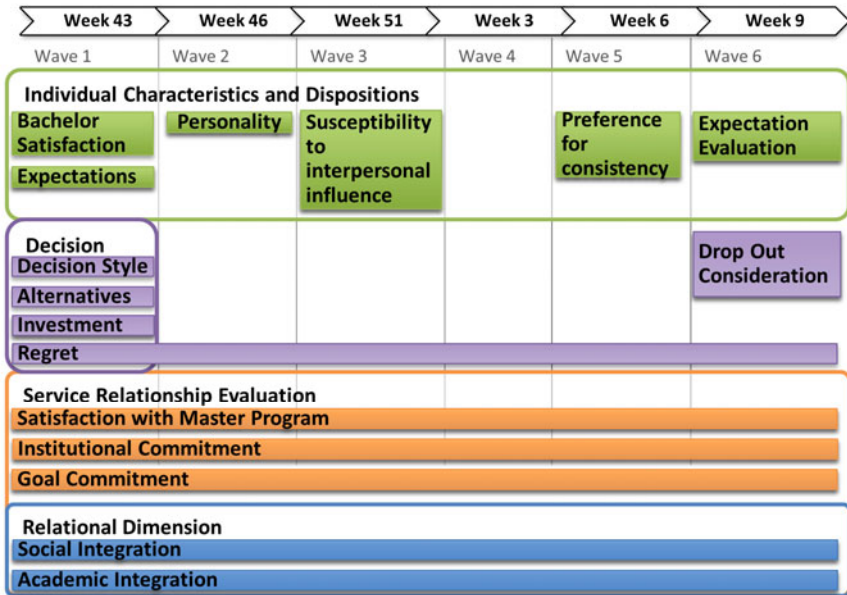


Figure 19: Overview of the Adapted Model for Empirical Inquiry.

The scales at the top are single inquiry measures that are assumed to inquire stable aspects about the respondents, or aspects of the decision process. They were distributed over the inquiry waves to have an equal workload for the respondents in each wave of inquiry. The boxes stretching across the 6 waves of inquiry depict continuously inquired measures – measures that were inquired repeatedly in each wave to investigate the development of the evaluation along each dimension of inquiry. The data collection period was the first semester of the 2014 class of master students at Freie Universität Berlin (FUB), which started in the fall semester of 2012/2013.

As shown, six waves of inquiry were conducted and the measures elaborated in the previous section were inquired through paper questionnaires. Each student was asked to fill out a questionnaire during class. The students did not receive course credit for the participation. The participation in the study however was incentivized in the form of a chance to win a gift card. The gift cards were paid for by the Pfadkolleg Research Center at Freie Universität Berlin, which is funded by the German Research Foundation (DFG).

The outcome overview for this analysis is shown in Table 24 and discussed hereinafter. The column **participation in wave** displays no sign of systematic non-

response of respondents or in waves. As shown, however, there are some missing individual responses for some Waves of inquiry. Additionally, there were some single independent items missing in otherwise completed surveys.

Name	ID	Participation in Wave						Alternatives		Investm.	Bachelor		Dec.
		1	2	3	4	5	6	Appl.	Acc.	Relocation	Satisf	D/O	Rati.
Vera	1	✓	✓	✓	✓	✓	✓	10	6	High	3.11	✗	✓
Mark	2	✓	✓	-	✓	-	✓	5	4	Medium	3.44	✗	✓
Anna	3	✓	✓	✓	✓	✓	✓	3	2	High	4.11	✓	✗
Julia	4	✓	✓	✓	✓	✓	-	5	2	Very High	3.11	✗	✓
Eric	5	✓	✓	✓	-	✓	✓	10	6	High	3.67	✓	✓
Richard	6	✓	✓	✓	✓	-	-	1	1	Medium	3.78	✗	✓
Stella	7	✓	✓	✓	-	✓	✓	5	1	High	1.56	✓	✓
Joanna	8	✓	✓	✓	-	✓	✓	1	1	Medium	2.56	✗	✓
Lena	9	✓	-	✓	✓	✓	✓	2	2	Low	3.56	✗	✗
Alice	10	✓	✓	✓	✓	✓	✓	2	1	Medium	4.00	✗	✓
Pauline	11	✓	✓	✓	✓	✓	✓	3	2	Very High	4.22	✗	✓
Teresa	12	✓	✓	✓	✓	✓	✓	2	2	Medium	4.67	✗	✓
Alexander	13	✓	✓	✓	✓	✓	✓	5	5	Low	2.78	✗	✓
Patrick	14	✓	✓	✓	✓	✓	✓	5	5	High	2.44	✓	✓
Leonhard	15	✓	✓	✓	✓	✓	✓	15	4	High	1.89	✗	✓
Sonja	16	✓	✓	✓	✓	✓	✓	5	3	High	3.67	✗	✓
Linda	17	✓	✓	✓	✓	✓	✓	8	6	High	3.44	✗	✓
Karin	18	✓	✓	✓	✓	-	-	1	1	Low	2.89	✓	✓
Daniela	19	✓	✓	✓	-	✓	✓	3	2	High	4.22	✗	✓
Andrea	20	✓	✓	✓	✓	✓	✓	4	2	High	2.89	✓	✓
Gisela	21	✓	✓	✓	✓	✓	✓	4	2	High	3.22	✗	✗
Karla	22	✓	✓	✓	✓	✓	✓	4	3	High	2.33	✓	✗
Lara	23	✓	✓	✓	✓	-	✓	1	1	Low	3.33	✗	✓
Lisa	24	✓	✓	✓	✓	✓	✓	6	1	High	2.78	✓	✗
Saskia	25	✓	✓	-	✓	-	-	6	5	High	2.11	✗	✓
Malte	26	✓	✓	✓	✓	✓	✓	1	1	High	3.67	✗	✓
Frank	27	✓	✓	✓	-	✓	✓	4	4	High	3.67	✗	✓
Peter	28	✓	✓	✓	-	✓	✓	1	1	Low	3.56	✗	✗
Rosemarie	29	✓	✓	✓	✓	✓	✓	3	3	High	3.11	✗	✗
Bettina	30	✓	✓	✓	✓	✓	✓	4	3	Low	3.22	✗	✓
Nikola	31	✓	✓	✓	✓	✓	✓	3	3	Medium	3.78	✗	✓
Lotte	32	✓	✓	✓	✓	✓	-	3	3	Medium	3.89	✗	✓
Maria	33	✓	✓	✓	✓	✓	✓	8	7	High	1.89	✗	✓
Louisa	34	✓	-	✓	✓	✓	✓	5	5	Medium	4.11	✗	✓
Volker	35	✓	✓	-	✓	✓	✓	3	1	High	3.33	✗	✗
Berta	36	✓	✓	✓	✓	✓	✓	10	3	Low	4.11	✓	✗
Oliver	37	✓	✓	✓	✓	✓	✓	5	2	High	3.22	✗	✗
Stefan	38	✓	✓	✓	✓	✓	✓	3	2	Medium	3.67	✓	✓
Rike	39	✓	✓	✓	✓	✓	✓	6	3	High	3.22	✓	✗
Ty	40	-	✓	✓	✓	✓	✓	-	-	-	3.11	-	-
Bo	41	-	✓	✓	✓	✓	✓	-	-	-	3.44	-	-
	Σ	39	39	38	35	36	36	Ø 4.5	Ø 2.8		Ø 3.3	11 ✓	28 ✓

Table 24: Overview of all Responses and Respondent Participation over the Course of the Longitudinal Inquiry along with Relevant Individual Decision Aspects.

To start the analysis, the decision is first examined whether its features suggest the potential for a path dependent decision and a subsequent process. The class that is subject of this inquiry consists of N= 41 individual students who make up the sample used for analysis. In order to protect the students' identities, the students received random, gender appropriate **names** as a unique identifier in addition to **ID** numbering. This supports identification and readability of results compared to the abstract numbered identification. The students with the IDs 40 and 41 did not participate in the first wave of inquiry, so they received the gender neutral names Bo and Ty, as their gender was not inquired.

For qualitative visual examination of the data, missing values are left untreated and interpretations are made despite these missing values. For the quantitative analysis however imputation was conducted, to enable analysis by means of regression and analysis of variance (ANOVA). Using complete-case analysis with these methods would have fundamentally reduced the usable data (Backhaus et al. 2011). For instance in Wave 1 of the inquiry, 24 of the 39 completed surveys lacked complete responses, meaning one or more single items of scales were missing. Without imputation, these missing items and responses would lead to an exclusion of the entire wave response for single participants and a loss of the remaining data completed by these 24 respondents for the analysis.

In order to be able to include the entire available data inquired in quantitative analyses, data imputation was employed to estimate the missing data. Due to the exploratory nature of the study and the subject matter, some missing data could be expected and imputation based on available responses in a given wave is a rational approach, which is commonly employed in medical statistics, where longitudinal studies are common (e.g. Laird, 1988).

Utilizing *Missing Value Analysis*, an "expectation-maximization" (EM) technique was used in cases of missing values in an otherwise completed dataset or entire responses for single waves. This method infers values based on the likelihood under the normal distribution (M. A. Hill 1997). One assumption that has to be met by the data is that missing values are missing completely at random (MCAR). The chi-square statistic to test this is referred to as "Little's MCAR test" (M. A. Hill 1997). For every wave and every multi item scale with missing items the test was run separately before data imputation through EM, details on the results are shown in Appendix D. The results show that some scales did not meet this criterion, as they had entire respondents missing meaning this data was not missing completely at random. While this is a

common phenomenon in longitudinal analyses with missing responses, it needs to be considered in the interpretation of quantitative results. The imputation was conducted using SPSS.

The decision in the context of this study is theoretically reasoned to be an individually important, complex decision, with more than one **alternative** to choose from and necessary up-front and ongoing **investment** by individual students. Grounded in this assessment is the expectation that consumer lock-in may occur for some individuals, so a first step is to analyze the actual decision situation. On average, students in this program sent out more than 4 applications and received an average of 2.8 admissions. This outcome makes a strong case for the availability of alternatives condition. Nevertheless, ten students only received one admission – that of the focal institution, FUB. For these students the choice was between this Master’s program and something other than a master’s program, at least for the time being. This could be a prerequisite for a higher potential of lock-in, as there may have been a higher tendency to decide in favor of the program instead of not doing anything.

Additionally, location was an important factor for students from Berlin and from outside Berlin alike. Considering the **investment** in relocation effort, more than 60% of students had to relocate from outside Berlin. For 21 students, the invested effort was high or very high, meaning that they were neither from Berlin originally, or had they studied in Berlin before.

The qualitative evaluation of the context revealed certain aspects of the program as relevant for the individual decision. To replicate these aspects, the students of the main study were asked about the main drivers for their decision for this Master’s program in an open question. Figure 20 shows a *word cloud* of the relevant responses. This form of visualization uses larger font size for more relevant or in this case more prevalent responses or words. It goes back to the psychologist Milgram and Jodelet (1976) in the form of cognitive maps and is common to visualize data on the Internet today (Viégas and Wattenberg 2008).



Figure 20: Word Cloud of Results regarding Reasons for Students’ Decision.

For instance, the university’s *location* in Berlin, *program aspects* and the *specialization* in management and marketing were the most prominent reasons for

deciding in favor of this program. They were mentioned most often by the students and are shown larger than other responses. These results coincide with the results from the qualitative interviews described in Section 4.1.1. For fewer students, the semester abroad and the professors were a central aspect for this choice. A few students also mentioned the admission as a reason, which may be particularly relevant for students who received only a single admission. Detailed individual results in absolute numbers are provided in the result summary in Appendix E.

Another relevant factor considered in the model individual educational history. **Satisfaction with the Bachelor's program** averaged at 3.28. Six students can be considered as having been dissatisfied with their Bachelor's studies, as they reported a satisfaction below 2.5. Two students also reported that they had been enrolled in another Master's program previous to the program that is subject of this inquiry.

The last column of Table 24 shows that the majority of students employed a *rational decision style*. This means that, when considering the decision for this Master's program, they used more rational than experiential thinking styles. This finding supports the notion that this decision was a complex consumption decision for the majority of students with a process of contemplation preceding the actual choice. It also supports the notion that the individuals perceive themselves to be rational in their choice heuristic, while being confronted with a highly complex choice problem.

This concludes the overview of the general study, consideration of individual history, and the properties of the decision. The results show the dispersion between individual applications, admissions, and investments. All in all, the study provides an extensive longitudinal basis for analysis, with many interrelated constructs measured. The initial analysis supports the notion that the complex decision, while being a very idiosyncratic one, required all students to commit to an uncertain path. Similarly, individual history and investment differed fundamentally and influenced the decision. Next, the service relationship is considered and locked-in individuals are classified within the data.

4.2.2 Aggregate Examination of the Service Relationship Process

To start the evaluation of the service relationship process, in a first step the means to identify locked-in individuals are examined. Following the development of two groups with the potential for individual lack of fit and lock-in within the two dimensions, the conditions for regression analysis and the expected relationships between the different continuous measures are examined quantitatively. Following this initial analysis, the

individual and longitudinal results are examined along evaluative dimensions and compared in terms of the two groups developed for identification. Lastly, individuals that were identified as interesting statistically are analyzed qualitatively considering all available data on them.

4.2.2.1 Grouping Potentially Locked-in Students

Following the decision from available alternatives and the investment, the service relationship process was entered by the 41 students. As hypothesized, some students are expected to experience lack of fit in this process. The analysis of this misfit starts with student's **consideration to drop out**.

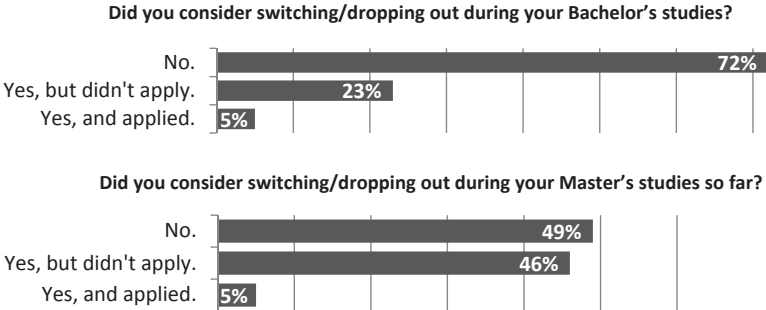


Figure 21: Average Responses to Question about Consideration to Drop Out during Bachelor's studies (Wave 1) and at some Point during Master's studies (Wave 6).

Figure 21 shows how the consideration of drop out was distributed among the students in their Bachelor's and at the end of the first semester in the Master's program. This tendency is considered a proxy for individual lack of fit with the choice of business as a major. Moving on to study in a business Master's is less likely, if such a misfit exists, which explains that the overwhelming majority of students said they did not consider dropping out.

Adverse selection can explain why the rate of drop out consideration during the Bachelor's studies was higher, as the students who considered dropping out during their Bachelor's studies are less likely to continue in a Master's program. The valid responses suggest that about 50% of the Master's students had in fact considered dropping out at some point by the last wave of the inquiry. This consideration to drop out is considered to signify perceived lack of fit with the service relationship and potential consumer lock-in. The students were thus grouped according to this tendency.

In addition to drop out consideration, the students were asked about their **expectations** from their Master’s program compared to their experience in their Bachelor’s program along five dimensions in the first wave of inquiry. Furthermore, they were asked to evaluate their experience along the same five dimensions in the last wave of inquiry. The scales used ranged from 1 to 5 and the items and average results are shown in Table 25.

Expectation and Evaluation compared to Bachelor’s studies	Pre (Expectation)	Post (Evaluation)
Expect to get to know my fellow students better.	3.69	3.08
Expect to feel closer to the teachers.	4.05	3.33
Expect a better understanding of the study content coherence.	4.15	3.33
Expect a greater sense of camaraderie among the students.	3.80	2.94
Expect to enjoy the lectures and seminars more.	3.95	2.92
Average	3.93	3.12

Table 25: Expectation and Expectation evaluation (Waves 1 and 6 respectively).

It is evident that the average expectations were higher than the evaluations of whether the expectations were met. More interesting for lack of fit considerations is grouping of the results among students. Based on the evaluation information, individuals were first categorized by whether their expectations were met. A difference between average expectation (pre) and average evaluation (post) above the mean was categorized as **expectations met**; differences below the mean were grouped as **expectations not met**.

Next, these two groups were compared along the five expectation dimensions, in line with the research by Appleton-Knapp and Krentler (2006). The results for both groups were compared in one-way ANOVAs with the 5 questions and 3 dimensions pre, post and change as dependent variables. Initially the conditions for conducting an ANOVA were examined, as laid out by Field (2009); outputs are presented in Appendix F. The sample and equal group sizes support the methodology, despite the violation of the normality condition in a test for normal distribution of dependent variables (Field, 2009, p. 360). Homogeneity of variances was given along most dimensions when examined in a Levene Statistic. For dimensions with significant results in the Levene Statistic, the more robust Welch’s F-ratio was still highly significant, supporting the underlying assumption of a significant relationship (Field, 2009, p. 384).

The results in Table 26 show that the groups did not differ regarding their expectations before they entered the program (*pre*), but differed along four out of five dimensions, when they were asked about the evaluation at the end of the inquiry (*post*). Similarly, the *change* in their evaluations was fundamentally different between both groups, which compared the pre and post evaluations. It can be assumed that students whose

expectations were not particularly felt that way in terms of social interaction with the other students and teachers, as well as feeling of camaraderie and enjoyment of lectures.

Evaluation compared to Bachelor’s program	Expectations met			Expectations not met		
	Pre	Post	Change	Pre	Post	Change
Get to know fellow students better.	3.4	3.6	0.2	3.8	2.6*	-1.2***
Feel closer to the teachers.	3.9	3.9	0.0	4.1	2.8**	-1.3***
Better understanding of content coherence.	4.1	3.4	-0.7	4.3	3.1	-1.2
Greater sense of camaraderie among students.	3.7	3.5	-0.2	3.8	2.3**	-1.5**
Enjoy the lectures and seminars more.	3.7	3.4	-0.3	4.1	2.4**	-1.7***
Number of students	N=19			N=15		

Significance codes: $p < *** 0.001$ $** 0.01$ $* 0.05$

Table 26: Comparison of Mean Results in Groups categorized by Expectation Evaluation regarding their Expectations Pre and Post term along with Change.

Both the **drop out consideration** and **expectation evaluation** in students make visible, who considered the chosen path to be undesirable. To operationalize the expectation evaluation, students, whose expectation evaluation in wave 6 along the five dimensions was below the average, were categorized as *expectations not met*, while the others were categorized as *expectations met*.

4.2.2.2 Continuous Evaluation Measures – Their Relevance for Potential Lock-In

The quantitative analysis is based on the assumption that the employed measures provide viable proxies for the phenomenon modelled. This means that the students’ evaluations over the waves of inquiry are consistent with the underlying model and are related as predicted, i.e. they signify cognitive dissonance.

To show relevant and significant results for the evaluative dimensions, the data is first examined for its consistency with predictions regarding the relationships between the employed measures. The evaluation dimensions *satisfaction*, *institutional*, and *goal commitment*, as well as the two elements of the *REM* are analyzed first. They are considered prerequisites of student loyalty, which means that low levels along these evaluations are a possible identifier of cognitive dissonance.

First the general coherence of the evaluation measures model is examined, to assure that the data is related as predicted. A correlation analysis in Appendix I shows a significant relationship between the continuous evaluative measures. All correlations are below 0.6, so multicollinearity can be precluded in analyses with more than one independent variable.

Testing the main relationships starts with institutional commitment as the dependent variable and the evaluation dimensions as independent variables. In Table 27 the relationship of satisfaction, integration, and REM are examined in separate regression analyses. The regression analyses for this work were conducted in R Statistical Computing. First the assumptions for regression analysis are considered. Graphical outputs for all continuous measure regressions that are not fixed-effects models are shown in Appendix I.

Dependent Variable: Institutional Commitment		
Independent Variable	Coefficient	Adj R²
Satisfaction Master	0.870***	.3031
Academic Integration	0.280***	.0454
Social Integration	0.303**	.0310
REM Regret	-0.968***	.4996
REM Self Recrimination	-0.869***	.6054

*Significance codes: p < *** 0.001 ** 0.01*

Table 27: Quantitative Examination of Expected Relationship between Main Measures.

Considering the plots, residuals are normally distributed in all five regressions. Furthermore, they do not display relevant signs of heteroskedasticity, autocorrelation, or non-linearity. Graphical outlier analysis similarly did not lead to elimination of observations. The condition of independence of residuals tested in the Durbin-Watson statistic is violated in this sample, which however is common in time series samples (Backhaus et al., 2011, p. 92). As in this case the general relationship is investigated without further analysis considering time differences, analysis continued.

The relationships suggested by Hennig-Thurau et al. (2001) discussed in Section 3.2.2 are tested in the first three rows. The same effect direction was found with satisfaction (i.e. quality) having the largest positive effect. The authors found academic integration to have a stronger effect on commitment than social integration. In this analysis, the inverse was found, but the direction of the effect is the same. This means support for the notion that satisfaction and integration are prerequisites of institutional commitment. The integration measures however do not explain a lot of the variance in institutional commitment. Their relevance as lock-in mechanisms is considered further in Section 4.2.3.3.

Additionally, the effect of regret on institutional commitment was examined along the two dimensions described before. Strong negative effect of regret and self-recrimination of institutional commitment were found. This supports the notion that *regret* can be a predictor of perceived lack of fit and path dependence, which is put forward by Arthur (1988). Consideration of regret as an evaluative dimension is

supported in the data, also explaining the relatively largest amount of variance in institutional commitment.

As stated in Hypothesis 1, students with a drop out tendency are expected to display a lack of fit along the presented evaluative dimensions. Hypothesis 2 compares differences in the same dimensions with regards to a lower than average expectation. The first and second hypotheses were tested by means of ANOVA examining the group differences along evaluative dimensions. The outputs for the analyses are shown in Appendix G. Based on these, the conditions for application of this methodology were tested. Independence of measurements can be assumed, whereas the grouping within students and waves may be cause for some concern. Nonetheless, each measurement was done in situ with a large enough total number of valid responses, as is summarized in Table 28.

Between-Subjects Factors of ANOVA 1			Between-Subjects Factors of ANOVA 2		
	Label	N		Label	N
Dropout Considered	Yes	96	Expectations Met	Yes	114
	No	102		No	90
	Σ	198		Σ	204

Table 28: Factors of two Analyses of Variance testing the First and Second Hypotheses.

The factor overview of the analysis also shows that group sizes were almost equal, with a total of 102 single responses (6 per student) not considering drop out and 90 single responses (equally 6 per student) not having their expectations met. Tests for normal distribution of the dependent measures had to be rejected, but sample size supports the assumption of normal distribution (Field, 2009, p. 360).

The Null of homogeneity of within-group variances was examined in a Levene Statistic, and had to be rejected for *institutional commitment* and *regret*. The more robust Welch's F-ratio was still significant at least at the $p < 0.05$ level, supporting the underlying assumption of a significant relationship (Field, 2009, p. 384). The ANOVA results are shown in Table 29.

Dependent Variable:	Master's Satisfaction	Institutional Commitment	Goal Commitment	General Regret
Dropout Considered	H1(a) ✓**	H1(b) ✓***	H1(c) ✓*	H1(d) ✓*
Expectations Met	H2(a) ✓**	H2(b) ✓***	H2(c) ✓*	H2(d) ✓***

Significance codes: $p < *** 0.001$ ** 0.01 * 0.05

Table 29: Test of Hypotheses 1 and 2 in ANOVA examining Group Differences along Evaluative Dimensions.

Hypotheses 1 and 2 on the group differences were accepted based on the responses for all levels of evaluation. This means that there are measurable differences between the groups of students who reported that the considered to drop out or that their

expectations were not met and those who did not report these tendencies. The 6 observations per student stem from the 6 waves of inquiry, as the time specific effects were not considered in this analysis. In the next Section, individual and also longitudinal effects are analyzed more closely.

4.2.3 Examination of Individual and Longitudinal Fixed Effects

Following this general and group examination of the data, next the individual and time effects are examined. To achieve a complete picture of the individual level process, the first fixed effects model examines the evaluation measures that are considered relevant for identifying individual cognitive dissonance in students. The students in this table fulfilled at least one of the following two conditions.

1. They rendered significant results in at least one of the regression analyses for evaluative measures, i.e. a positive or negative difference from the mean along at least one of the **dependent continuous variables**.
2. They were potentially locked in as defined in Section 4.2.2.1, i.e. they reported a **tendency to drop out (D/O)**, or their **expectations were not met (Exp. not met)** at the end of the semester.

Students who did not fit these conditions were left out of the results table, as their results do not lead to an assumption of potential lock-in and was considered inconspicuous. Table 30 shows the results for 36 students from the main sample that met one of the conditions. Additionally, significant fixed-effect results regarding the factor **wave** are shown for each dependent variable.

These effects account for the longitudinal nature of the data. Each column under the label **dependent continuous variables** thus represents a single fixed-effects regression analysis. Heteroscedasticity was examined by means of the Goldfeldt-Quandt test and Autocorrelation by means of the Durbin-Watson test. The Null for homoscedasticity was accepted for all regressions. Independence of residuals was violated for the dependent variables *goal commitment*, *regret* and *self-recrimination*, but a visual examination as recommended by Backhaus et al. (2011) did not suggest autocorrelation of residuals, so analysis continued. The outputs for visual examination are shown in Appendix K; they also suggest normal distribution of the residuals.

The second condition is also considered the **match** category in the far right column. A check mark signifies that the student considered dropping out and that expectations were met at above average respectively. The last row in Table 30 shows the adjusted

coefficient of determination (Adj. R²) which suggests acceptable general model fits in all regressions.

	Dependent Continuous Variables					Match	
	Master's Satisfaction	Institutional Commitment	Goal Commitment	General Regret	Self-Recrim.	D/O	Exp. met
Alexander		-1.243***		0.983***		✓	✗
Alice		0.868**				✗	✓
Andrea						✓	✓
Anna		-0.632*				✓	✗
Berta				-0.642*		✓	✗
Bo		-1.009**		0.448°		✓	N/A
Daniela		0.7569*				✗	✗
Eric		-0.965**		-0.500°		✓	✗
Frank						✓	✓
Gisela				-0.434°		✗	✗
Joanna	-0.527*		-1.034***			✗	✓
Julia		0.978**	0.537°	-0.912***		N/A	N/A
Karin			-0.909**			N/A	N/A
Karla		-0.854**		0.691**	0.839*	✗	✓
Lena	-0.421°	-0.710*		0.621*		✓	✗
Leonhard				-0.434°		✗	✓
Linda			0.510°	-0.517*		✗	✗
Lisa	0.603*			-0.434°		✗	✓
Louisa	-0.565*	-1.576***		0.910***		✓	✗
Malte	0.700**	1.034***		-1.059***	-0.702°	✓	✓
Maria						✓	✓
Mark						✗	✗
Nikola	0.632*	1.035***	0.621*	-0.475°		✗	✓
Oliver			-0.935**			✓	✓
Patrick	-0.667**	-1.076***		0.566*		✓	✗
Pauline		-0.688*	0.565°	0.483°	0.922*	✓	✓
Peter		0.812**			-0.703°	✗	✓
Rike		1.312***				✓	✓
Rosemarie		0.924**		-0.725**		N/A	✓
Saskia			-0.639*			N/A	N/A
Sonja			0.565°			✗	✓
Stefan						✓	✗
Stella	-0.802**	-1.410***	-1.534***	1.166***	1.256**	✓	✗
Teresa						✗	✗
Vera	-0.447°					✓	✗
Volker						✗	✗
Wave 2	-0.373***						
Wave 3	-0.577***	-0.434***		0.284**	0.562***		
Wave 4	-0.514***	-0.515***		0.312**	0.469**		
Wave 5	-0.695***	-0.772***		0.406***	0.705***		
Wave 6	-0.621***	-0.738***		0.343***	0.691***		
Adj R ²	.402	.656	.421	.522	.267		

Significance codes: $p < *** 0.001$ ** 0.01 * 0.05 ° 0.1

Table 30: Overview of Multiple Factorial Regression of Evaluation Measures with Student and Wave as independent Factors.

The analysis of the longitudinal effects in the bottom rows shows that **waves** displayed some significant differences compared to wave 1 along all evaluative dimensions, except for *goal commitment*. Along the other dimensions the waves following wave 2 are all significantly different from wave 1 signifying a general decrease in two out of three evaluative dimensions over time, as well as a general increase in regret over time.

This means that, on average, *satisfaction* and *institutional commitment* decrease with longer time and experience in the program. It also shows that all dependent evaluation variables are at their lowest in the fifth wave of inquiry and – on average – recover slightly in the sixth wave, providing some evidence for a recovery in these dimensions, as predicted for the phase-based interpretation of lock-in.

More interesting however are the individual fixed effects. For consumers with a lack of fit, **satisfaction**, **institutional commitment** and **goal commitment** below the mean would be expected. The coefficients of students with significant results in the direction predicted for locked in individuals are indicated in bold text. **Regret** was earlier identified to be a signifier of lock-in. Here, significantly higher levels of regret or self-recrimination are marked bold. The quantitative results are promising but still somewhat ambiguous. An individual qualitative analyses aims at categorizing these individuals further.

4.2.3.1 Identification of Locked-In Students and Model Phases

The quantitative analysis of individuals does not tell a lot about individual courses over the process of the service relationship. The fact that individuals had significant results quantitatively along single evaluative measures does not necessarily mean that they were locked-in. Likewise, students without a lack of fit that is measurable quantitatively may have rather passed through a phase of individual lack of fit that recovered subsequently. In the following, the individual processes over the course of the six waves of inquiry are in focus of attention. The quantitative results are considered next to drop out consideration and evaluations not met criteria, as they may still have relevance.

Of the students who had significant coefficients as predicted along at least one dimension, there were four who did not fulfill the match category. They did not report a tendency to drop out, an expectation evaluation below the mean, or had no data available along one of these dimensions. Their results are shown in Table 31. These results show that most of them struggled with commitment to the goal of completion

of the Master’s program, but not with commitment to the institution or regret regarding the decision. Joanna also showed significant and lasting dissatisfaction with the program while Karla’s set of significant values differed completely along three dimensions.

Further examination of the participation revealed that Joanna, Karin, and Saskia had missing results in one or more waves of inquiry making individual analysis regarding phases in the data difficult. As they were mostly inconspicuous along dimensions other than goal commitment, they were not considered candidates for persistence or lock-in, as their evaluative process could not be fully tracked for phase identification in line with the model.

	Dependent Variables					Missing Waves
	Master’s Satisfaction	Institutional Commitment	Goal Commitment	General Regret	Self-Recrim.	
Joanna	-0.527*		-1.034***			W4
Karla		-0.854**		0.691**	0.839*	
Karin			-0.909**			W5, W6
Saskia			-0.639*			W2, W5, W6

Significance codes: $p < *** 0.001$ $** 0.01$ $* 0.05$

Table 31: Outlier Students with Significant Regression results in Expected Direction without Drop Out Tendency, Low Experience Evaluation, or for whom Data was not Available.

Karla was carried over for individual analysis due to the significant results in quantitative analyses but was inconspicuous regarding the visibility of phases in her data; her evaluations were constant over all waves of inquiry. The results do not suggest that she went through a phase of cognitive dissonance as characterized in the model.

Next, students who reported a tendency to drop out over the course of the program or who did not have their expectations met by the program are considered. Twelve of the students in one or both match groups showed no significantly negative results along any of the evaluative dimensions. For the visual analysis, the three main evaluative dimensions were considered regarding signs of a phase of cognitive dissonance (evaluation below the mean) with recovery in subsequent phases. This course in evaluation was predicted for locked in individuals in the model because in the case of lock-in cognitive dissonance reduction occurs and evaluations are expected to improve.

In Table 32 the visual analysis of individual results that fell in one or both of the match groups are summarized. The students in the rows marked in gray considered dropping out, went through a phase as described along more than 2 main evaluative dimensions and also had a phase of regret regarding the program. They are thus considered

potentially locked-in in the sense of this work. These respondents' results strongly suggest that they passed through phase II over the course of their experience with the Master's program and adapted their evaluations as described for consumer lock-in in phase III. The described visual examination was done for all respondents, but a phase of negative evaluation as predicted by the adapted consumer lock-in model further could not be identified with other respondents. Overviews for all individual results, including the remaining respondents, are shown in Appendix M.

	Match		Phase of Cognitive Dissonance in Evaluation Measure					Missing Waves
	D/O	Exp. met	Master's Satisfaction	Institutional Comm.	Goal Comm.	General Regret	Self-Recrim.	
Alexander*	✓	✗	W4, W5	W4, W5	-	W4	W4	-
Andrea	✓		W3, W4	W4	W4	W4	W4	-
Anna*	✓	✗	W4	W3	W3	W3	W3	-
Berta	✓	✗	-	-	W3	-	-	-
Bo*	✓		W3	All	-	W2	W2	W1
Daniela		✗	-	-	W3	-	-	W4
Eric*	✓	✗	-	W3, W5	-	-	W5	W4
Frank	✓		-	-	-	-	-	W4
Gisela		✗	W5	-	W4, W5	-	-	-
Lena*	✓°		All	W5	W5	W3-W5	W3-W5	W2
Linda		✗	-	-	-	-	-	-
Louisa*	✓	✗	W4, W5	W5	-	W3-W5	W3-W5	W2
Malte	✓		-	-	W5	-	-	-
Maria	✓		W3	W3	W3	W3	W3	-
Mark		✗	-	-	-	-	-	W3, W5
Oliver*	✓		-	-	W3	W3	-	-
Patrick*	✓	✗	W4, W5	W5	-	W5	W4, W5	-
Pauline*	✓°		W5	W5	-	W5	W3	-
Rike	✓		W5	-	W5	-	-	-
Stefan	✓	✗	W2	W4	-	W4	W4	-
Stella*	✓	✗	W3	W3	W2	W5	W3	W4
Teresa		✗	W3	-	W5	-	-	-
Vera*	✓	✗	W3, W5	W5, W6	-	W5, W6	W5, W6	-
Volker		✗	-	W5	-	W5	W5	W3

* Respondents with Significant Results in Direction Predicted.

° Student did not only Consider Dropping Out, but also Sent out Alternative Applications.

Table 32: Visual Examination Summary of Students selected for Individual Qualitative Examination based on Match Groups.

In support of the notion suggested by the individual visual examination, three of the results presented in the table are presented and discussed hereinafter, matched with the individual average results per Wave. Stefan, Lena and Stella were selected for this individual examination, as they are characteristic cases for the consumer lock-in phenomenon.

Stefan is one of the three respondents analyzed visually that did not display significant differences from the mean in the quantitative analysis. In this group, a phase of lack of fit can be discovered in form of bad situational evaluations, when examined visually, as depicted in Figure 22. Stefan reported a drop out tendency and had an early drop in satisfaction in Wave 2.

This phase of dissatisfaction recovered but was followed by a drop in institutional commitment in Wave 4 that also recovered subsequently. Additionally, Stefan’s evaluation of regret regarding the decision for this program rose between Waves 1 and 4 and then dropped again. Other evaluative dimensions remained average throughout the inquiry. The combination of these aspects however makes it likely that he is locked in and this affected his decision to remain in the program. The adaptation to reduce cognitive dissonance of persistence in the program can be observed in a normalization of the evaluations that dropped at one point over the service relationship process.

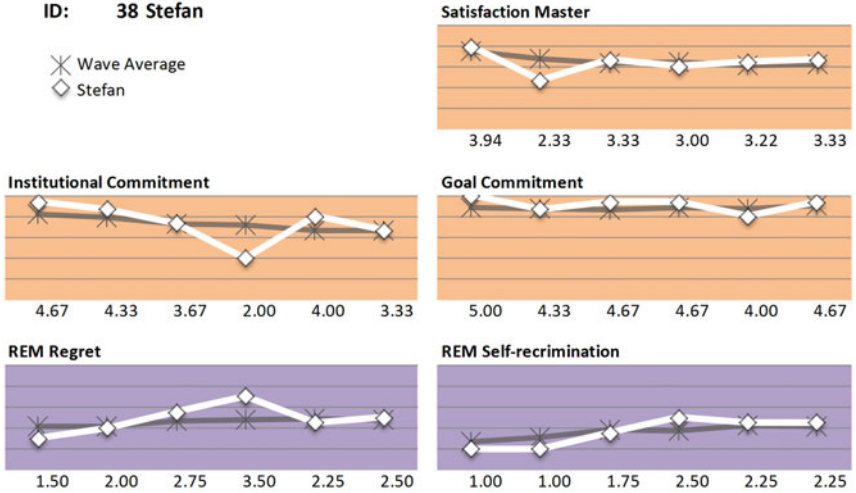


Figure 22: Overview of Evaluation Results for Respondent Stefan over the six Waves of Inquiry.

Lena is a respondent that not only considered dropping out but also reported that she had actively searched for alternative programs. While this response was not handled differently in quantitative analysis, it does make a difference when considering this student qualitatively. It suggests that the perception of lack of fit with the program was at some point large enough that it not only caused cognitive dissonance, but also another cognitive response – search for alternatives.

Figure 23 supports this notion of an increased lack of fit in later Waves of inquiry, despite the fact that values for Wave 2 are missing. While being largely committed to the goal of Master’s education, Lena showed a particularly low institutional commitment. Similarly, satisfaction is consistently below average. The levels of regret and self-recrimination were consistently above average after Wave 1. Due to the levels of institutional commitment that do not seem to recover, Lena is a potential candidate to be considered locked-in according to the model of this work. The social level mechanisms are examined in the next section to see if they support this notion.

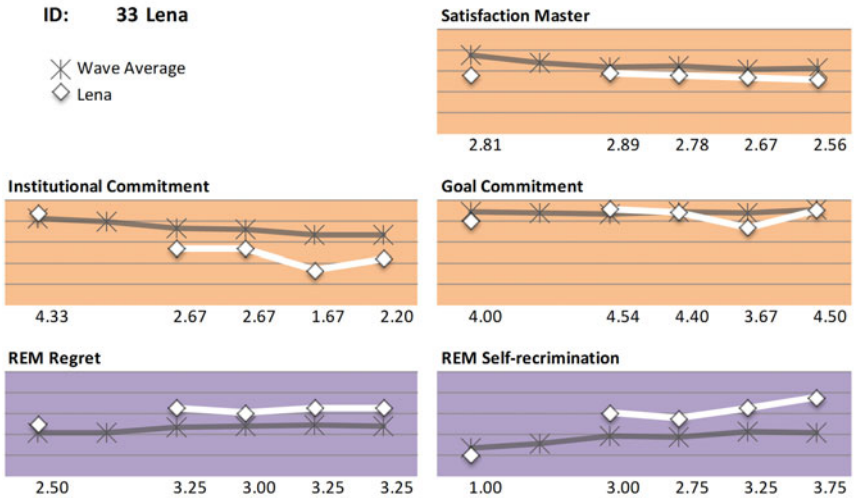


Figure 23: Overview of Evaluation Results for Respondent Lena over the six Waves of Inquiry. Stella was the respondent with the most significant deviations from the average in the fixed effects model analysis. All five evaluative measures showed significant results in the predicted direction. Despite one missing value in the available process data on this respondent, the data strongly suggests this respondent experienced a lack of fit.

As visualized in Figure 24, the most extreme point in satisfaction is Wave 3, which recovers slightly in the following waves while regret remains high. Commitment evaluations are equally low in this respondent starting in Wave 3. One interesting aspect about this respondent is that she applied for five Master programs and only received a single admission. In Section 4.2.1 this was reasoned to be a potential proxy for locked-in individuals, as they did not have a choice and had to pursue the program or something else entirely. These findings make a strong case for lock-in of the student Stella.

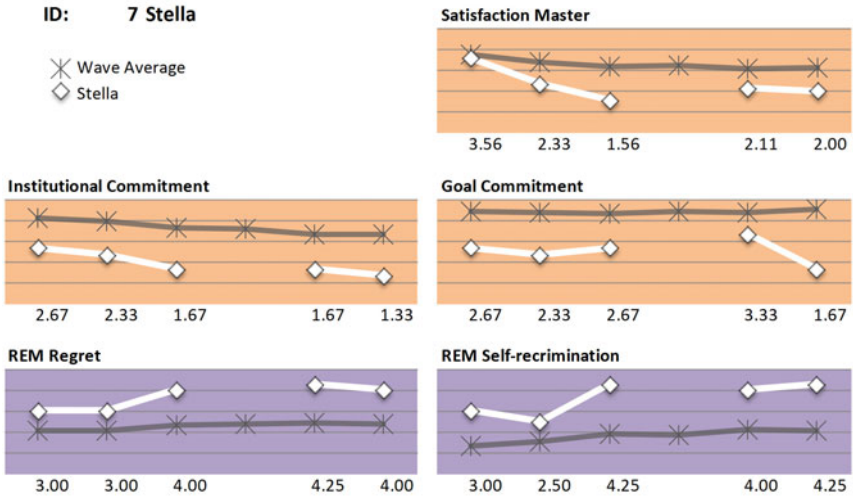


Figure 24: Overview of Evaluation Results for Respondent Stella over the six Waves of Inquiry.

These examples represent the twelve students marked in grey in Table 32, where both the quantitative as well as the qualitative analysis of low evaluations in single Waves show signs of potential cognitive dissonance, an antecedent of consumer lock-in. Over all, the described outcomes suggest that drop out tendency is a better predictor of lock-in in individuals than the expectation evaluation. Lock-in in a path dependent sense however is reliant on the existence of lock-in mechanisms. In the next sections, the students are examined for their characteristics and the relational lock-in mechanisms predicted in this context.

4.2.3.2 Student Characteristics as Determinants of Lock-in

The model developed as a basis for the empirical work proposes that individual differences may determine individual propensity for consumer lock-in. Individual differences have been shown in the previous individual fixed effects analyses to serve to identify locked in students. To test whether students’ characteristics explain these differences, they are examined in the following.

Table 33 provides an overview of the individual scores. For the general level categorization of the students, *personality* was inquired, which is assumed to differ along five dimensions. Furthermore, *preference for consistency* (PFC) and *susceptibility to interpersonal influence* (CSI) were identified as potentially relevant individual traits.

Name	Pot. Locked-in	Match		Personality					PFC	CSI Score
		D/O	Exp. met	Extr.	Agr.	Con.	Stab.	Exp.		
Alexander	✓	✓	✗	2.5	4.0	5.0	5.5	3.5	4.17	54
Alice		✗	✓	2.5	2.5	5.5	3.5	4.5	3.94	50
Andrea	✓	✓	✓	5.5	4.0	6.5	5.0	6.0	3.00	27
Anna	✓	✓	✗	5.0	3.5	3.5	6.0	6.0	2.89	36
Berta		✓	✗	2.5	4.0	3.0	2.0	5.5	3.06	50
Bettina		✓	✗	3.5	4.0	5.0	3.5	5.0	3.50	39
Bo	✓	✓	N/A	5.5	4.0	5.0	4.5	6.0	3.44	59
Daniela		✗	✗	6.0	5.5	4.0	5.5	6.0	2.94	41
Eric		✓	✗	2.5	2.0	5.0	3.0	6.0	2.89	22
Frank		✓	✓	2.5	3.5	5.5	5.5	4.0	2.94	N/A
Gisela		✗	✗	2.5	5.5	6.0	3.5	4.0	4.06	80
Joanna		✗	✓	5.5	2.0	6.0	4.5	5.5	3.78	51
Julia		N/A	N/A	5.5	3.5	6.5	3.0	6.0	N/A	24
Karin		N/A	N/A	4.5	5.0	5.5	5.0	4.5	N/A	50
Karla		✗	✓	4.5	4.5	4.5	2.5	5.5	2.33	38
Lara		✓	✗	5.5	4.5	6.5	5.0	6.0	N/A	23
Lena	✓	✓	✗	N/A	N/A	N/A	N/A	N/A	2.89	65
Leonhard		✗	✓	N/A	N/A	N/A	N/A	N/A	3.39	55
Linda		✗	✗	3.5	4.0	6.0	6.5	4.0	2.56	25
Lisa		✗	✓	3.5	5.5	4.5	5.0	5.5	3.33	28
Lotte		N/A	N/A	4.0	3.5	5.0	5.5	4.5	3.50	39
Louisa	✓	✓	✗	N/A	N/A	N/A	N/A	N/A	3.00	42
Malte		✓	✓	3.0	3.5	5.5	4.5	4.5	3.06	18
Maria	✓	✓	✓	4.0	4.5	5.5	4.5	5.5	2.94	46
Mark		✗	✗	4.5	4.5	5.0	5.0	6.5	N/A	N/A
Nikola		✗	✓	3.0	5.0	6.0	3.5	5.0	3.89	33
Oliver		✓	✓	2.0	4.0	4.0	4.5	6.0	2.83	22
Patrick	✓	✓	✗	4.5	3.5	2.5	6.0	4.0	3.83	43
Pauline	✓	✓	✓	5.0	5.5	6.0	6.0	3.5	3.11	32
Peter		✗	✓	4.0	4.5	5.5	6.5	3.0	3.06	44
Richard		N/A	N/A	2.5	4.5	5.5	5.5	5.5	N/A	39
Rike		✓	✓	5.0	5.0	5.0	5.0	5.0	3.39	53
Rosemarie		N/A	✓	6.5	4.0	4.0	4.5	6.5	3.94	66
Saskia		N/A	N/A	3.0	5.0	6.0	5.5	6.5	N/A	N/A
Sonja		✗	✓	6.0	4.5	6.5	4.5	4.0	3.39	35
Stefan	✓	✓	✗	1.5	2.0	6.0	5.0	5.5	2.50	43
Stella	✓	✓	✗	3.0	4.0	5.0	2.0	5.5	3.78	19
Teresa		✗	✗	2.5	5.5	6.0	5.5	5.0	3.28	28
Ty		N/A	✗	6.5	4.5	6.0	4.5	5.0	2.72	51
Vera	✓	✓	✗	4.5	4.0	6.0	3.0	4.5	3.94	25
Volker		✗	✗	3.5	2.5	3.5	6.0	6.5	2.89	54

Table 33: Distribution of Personality Attributes and Individual Traits of Respondents.

These were part of Hypothesis 3, as determinants of potential lock-in at the outset of a process. Due to a lack of correlation of the independent measures, individual analyses were run to examine each personality trait. The hypothesis is examined by ANOVA;

the results are shown in Table 34, the outputs for the analyses are shown in Appendix H.

The conditions for application of this methodology were tested. Independence of measurements can be assumed, the scales were also largely normally distributed. Some tests for normal distribution of the dependent measures had to be rejected, but visual examination supported the notion of normal distribution.

The Null of homogeneity of within-group variances was examined in a Levene Statistic, and had to be rejected for *PFC* and *CSI*, which also did not have significant results in the analysis. Most relationships had to be rejected, pointing at a more complex picture of the relationship between individual characteristics and potential for lock-in.

Dependent Variable: Fixed Factor	Personality					PFC	CSI Score
	Extr.	Agr.	Con.	Stab.	Exp.		
Potentially Locked-in	H3(a) ✓°	H3(a) x	H3(a) x	H3(a) ✓°	H3(a) x	H3(b) x	H3(c) x
Dropout Considered	H3(a) x	H3(a) x	H3(a) x	H3(a) ✓°	H3(a) x	H3(b) x	H3(c) x
Expectations Met	H3(a) ✓*	H3(a) x	H3(a) ✓°	H3(a) x	H3(a) x	H3(b) x	H3(c) x
Adj. R ²	.144	.024	.053	.123	-.139	-.078	-.134

Significance codes: $p < *** 0.001$ ** 0.01 * 0.05 ° 0.1

Table 34: Test of Hypothesis 3 examining Group Differences along Personality and Trait Dimensions by means of ANOVA.

Potentially locked-in students were found to have a higher level of *extraversion* and a higher level of *emotional stability*, but both significance levels and goodness of fit are low, so these results were not interpreted and Hypothesis 3 was rejected; individual analysis however continues. Overviews for the individual results regarding personality dimensions are included in individual results in Appendix M.

4.2.3.3 Investigation of the Relational Mechanisms

In the previous section, individuals with a potential for lock-in were identified. In the next step, the attention shifts to the relational mechanisms in the empirical study. These mechanisms are assumed to aid consumer lock-in in the process model understanding, by facilitating the persistence decision in the cognitive process. They are also a central element of the path dependence understanding of lock-in and were included in the model and the definition of consumer lock-in as such.

For the context of this empirical inquiry, *social* and *academic integration* are the most central social level lock-in mechanisms. They are interpreted as antecedents of

institutional commitment, which is a proxy for continued student loyalty. The rationale behind this interpretation is that they serve to manifest the student’s commitment towards the institution which in turn works for student persistence and loyalty. In further regressions, their general effects on the evaluative measures are examined. Table 35 shows the results.

Dependent Variable:	Master’s Satisfaction	Institutional Commitment	Goal Commitment	General Regret	Self-Recrim.
Academic Integration	0.269***	0.244**		-0.263***	-0.189**
Social Integration		0.242*	0.218**		
Adj. R ²	.1042	.0631	.0264	.0712	.0243

Significance codes: $p < *** 0.001$ ** 0.01 * 0.05

Table 35: Quantitative Examination of Relationship between Evaluative Measures and Integration Measures.

As in the previous regressions, the Goldfeldt-Quandt test and the Durbin-Watson test were conducted. The null for homoscedasticity was accepted for all regressions. Independence of residuals however was violated, which again was accepted due to the nature of the sample and visual examination. The outputs for visual examination are shown in Appendix I; they mostly suggest normal distribution of the residuals. Non-normal distribution is attributed to the time effects that are not considered in these regressions.

The results support Hypothesis 4, that these mechanisms are relevant for students’ persistence in a program. The last row shows the adjusted coefficient of determination suggests that only a low level of variance is explained by the variables *academic* and *social integration*, nonetheless significant results suggest *academic integration* affecting *satisfaction* and *institutional commitment*. *Social integration* is relevant for *institutional* and *goal commitment*. The regret measures were only affected by *academic integration*, but at even lower levels of R². Academic integration seems to be more important for satisfaction and decision regret, while social integration only affects student’s commitment. The results provide support for Hypothesis 4. Integration is relevant for evaluation measures and thus the individual persistence decision in the aggregate, ignoring time and individual effects.

Following this general analysis, individual and time fixed effects are examined for *academic* and *social integration* in a regression analysis, as was done in Section 4.2.3 for the evaluative measures.

Table 36 shows the results of this regression, alongside information on whether the student was categorized as locked-in and the match categories used previously for comparison. Next to the visual analysis of the two regressions, the Goldfeldt-Quandt

and Durbin-Watson tests were conducted. The Null for homoscedasticity was accepted for both regressions. Independence of residuals was violated for social integration, but a visual examination did not suggest autocorrelation of residuals, so analysis continued. The outputs for visual examination of the regression conditions are shown in Appendix K; they suggest normal distribution of the residuals in the histograms. The adjusted coefficients of determination suggest acceptable general model fits in all regressions.

	Potentially Locked-in	Dependent Variables		Match	
		Academic Integration	Social Integration	D/O	Exp. met
Andrea	✓	-0.997***		✓	✓
Anna	✓		-0.457*	✓	✗
Berta		-0.497°	-0.582*	✓	✗
Bettina			-0.457*	✗	✓
Bo	✓		0.606**	✓	N/A
Eric			-0.708**	✓	✗
Joanna			-0.458*	✗	✓
Karla		0.503°	0.502*	✗	✓
Lara		-0.806**		✗	✓
Lena	✓	-0.653*		✓	✗
Leonhard		0.703**		✗	✓
Linda		-0.497°	-0.457*	✗	✗
Maria	✓	-0.463°	0.627**	✓	✓
Nikola			0.835***	✗	✓
Oliver		0.570*		✓	✓
Patrick	✓	-1.497***	-0.415°	✓	✗
Pauline	✓		0.752**	✓	✓
Rike			0.502*	✓	✓
Rosemarie		1.670***	0.960***	N/A	✓
Teresa		-0.797**	0.418°	✗	✗
Ty		1.028***		✗	N/A
Vera	✓	-0.730**	-0.457*	✓	✗
Volker		0.629*	0.425°	✗	✗
	Wave 2		0.269**		
	Wave 3	-0.196°	0.161°		
	Wave 4	-0.206*			
	Wave 5	-0.204*			
	Wave 6				
	Adj R ²	.574	.479		

Significance codes: $p < *** 0.001$ $** 0.01$ $* 0.05$ $° 0.1$

Table 36: Overview of Multiple Factorial Regression of Integration with Student and Wave as Independent Factors.

The individual differences lead to the conclusion that students differed in their perception of both academic and social integration, in both directions from the mean. Negative individual results regarding both integration types suggest that some

individuals felt badly integrated on the social and/or academic level. Some students however felt significantly better integrated socially and/or academically than the mean. Again, these fixed effects can only serve as a proxy for their relevance as lock-in mechanisms as even a stable integration that does not significantly differ from the mean can suggest their relevance as a mechanism, when the evaluative dimensions display a phase of cognitive dissonance.

Considering the results for the Waves, academic integration appears to have dropped generally over time, with Waves 3, 4, and 5 being significantly lower than the mean along all respondents. This might explain the prevalence of negative evaluations of academic integration among the results. Social integration on the other hand rose after the first Wave among all students. This can be attributed to the fact that students familiarized themselves over the course of the early Waves, while they did not know each other that well yet in the first Wave.

According to the adapted model, student integration is assumed to be relevant for evaluation of the program. To support this notion, an open question was posed in Wave 4 of the program, inquiring three aspects of the program that may be a cause of dissatisfaction among students.

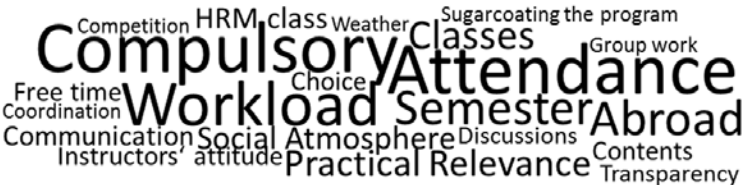


Figure 25: Word Cloud of Results regarding Causes of Dissatisfaction.

Figure 25 shows a word cloud summary of the responses, where the size of an option reflects the frequency at which an aspect was mentioned by students. The interpretation of this means of visualization is explained in Section 4.1.2; a graphical overview of the responses is also shown in Appendix L. Aspects mentioned by students in this inquiry that can be considered relevant for social or academic integration refer to the *social atmosphere*, *communication*, *competition*, and *instructor's attitude*.

In view of that, the regression in Table 35 found that academic integration is positively related to satisfaction, with the highest adjusted coefficient of determination among the different regressions. Elements of service provision, like *compulsory attendance* and

workload however were more prominently mentioned, suggesting that these are responsible for the low explained variance.

The individual results show a more differentiated picture, suggesting that among the locked-in individuals, eight showed significant differences from the mean in academic and/or social integration. Academic integration on the other hand appears to have been mostly reason for dissatisfaction among locked in students; Andrea, Lena, Maria, Patrick and Vera had a negative fixed effect for this integration dimension.

The results suggest that these students felt that their academic integration was worse than average over all waves of inquiry. For integration to work as a lock-in mechanism as predicted, integration would be expected to be more or less constant and at or above the mean. The individual analysis conducted in the next section aims at uncovering the integration effects more closely by means of a visual and qualitative examination of the individual results of potentially locked-in students, as was done before in Section 4.2.3.1.

4.2.3.4 Visual and Qualitative Examination of Individual Results

The results of the regression shown in Table 35 suggest that respondents Bo, Maria, and Pauline all perceived their level of *social integration* with other students in the program to be consistently above the mean over the course of the first semester of the program. In line with the model reasoning, they are potentially locked in and had significant positive results in social integration that might have affected their decision for persistence.

In the following, these three students are considered individually in visual examination of their course of experience in the inquiry. This examination matches these results with the evaluation dimensions to identify a potential phase of cognitive dissonance experienced by these three students.

Despite missing responses for the first wave of inquiry, **Bo** is a respondent whose results fit the developed consumer lock-in model very well. In Waves 2 and 3, a phase of negative evaluation in satisfaction and institutional commitment is visible that mostly improves thereafter.

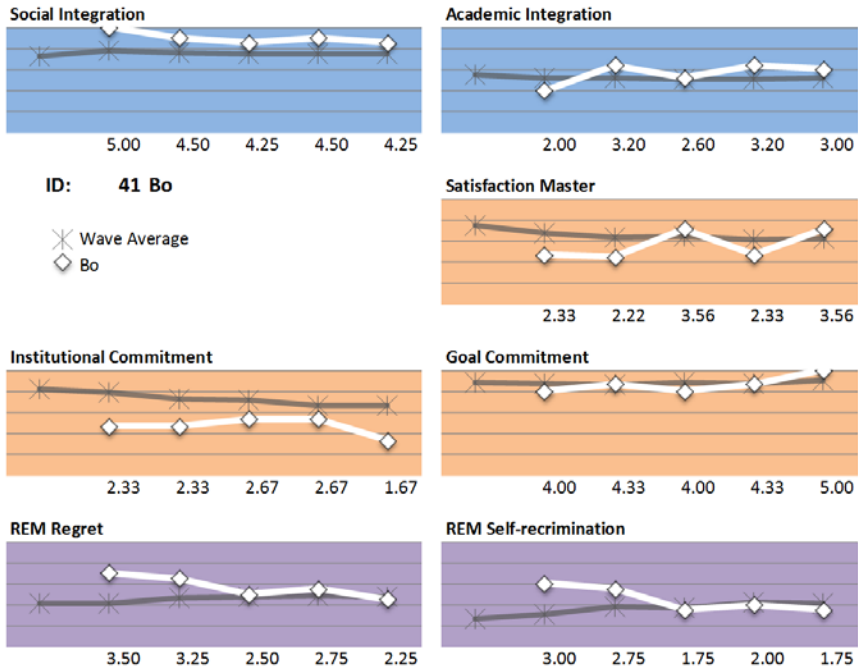


Figure 26: Overview of Integration and Evaluation Results for Respondent Bo over the six Waves of Inquiry.

As shown in Figure 26, regret regarding the decision develops the same way. In support of social level mechanisms working in this student, the social and academic integration is mostly above average and social integration is even significantly different from the mean over all Waves of inquiry. The model suggests that an adaptation to reduce cognitive dissonance of persistence in the program follows such a phase, which the data for this respondent supports, even when considered visually. According to the model predictions, the overall results for this respondent lead to believe that he passed the modelled process of lock-in in form of a phase of cognitive dissonance and subsequent reduction in the face of high social integration.

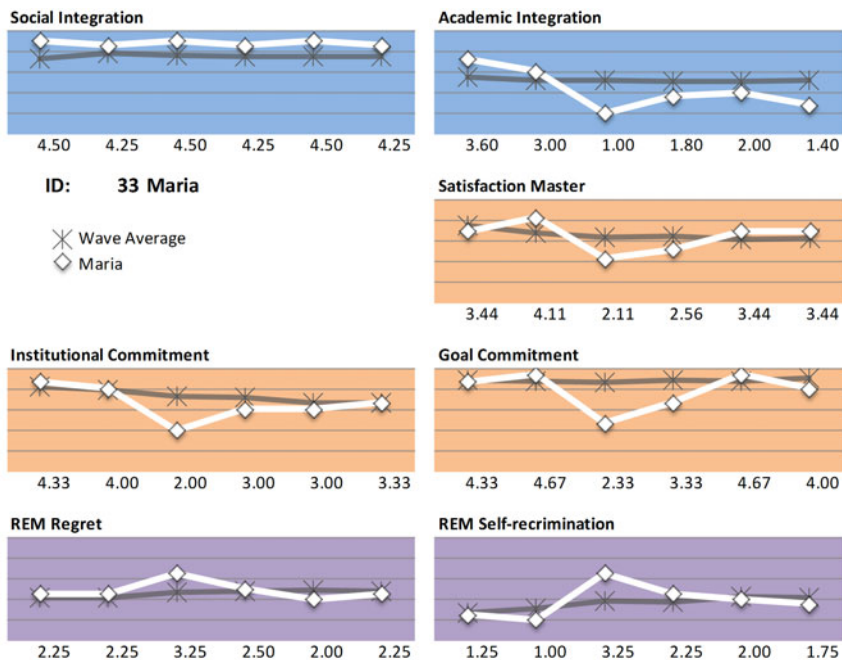


Figure 27: Overview of Integration and Evaluation Results for Respondent Maria over the six Waves of Inquiry.

Respondent **Maria** is special in that she did not display significant differences from the mean in the fixed-effects analysis in Section 4.2.3. Visual examination of the data however reveals a phase of negative evaluations in Wave 3, shown in Figure 27. This phase is flanked by an above average perception of social integration. Maria reported a drop out tendency but was inconspicuous along evaluative dimensions in the first two waves of inquiry. It was only in Wave 3 that the responses differed fundamentally and recovered subsequently. The results suggest a shock in evaluations that did not affect social integration.

The combination of these aspects makes it likely that she was locked in and this affected her decision to persist in the program. This notion is supported when examining the social integration, which is significantly higher than the mean, supporting the model conception. Lack of academic integration, on the other hand, might have been a reason for dissatisfaction in her case. In the visual examination it correlates with the evaluative measures.

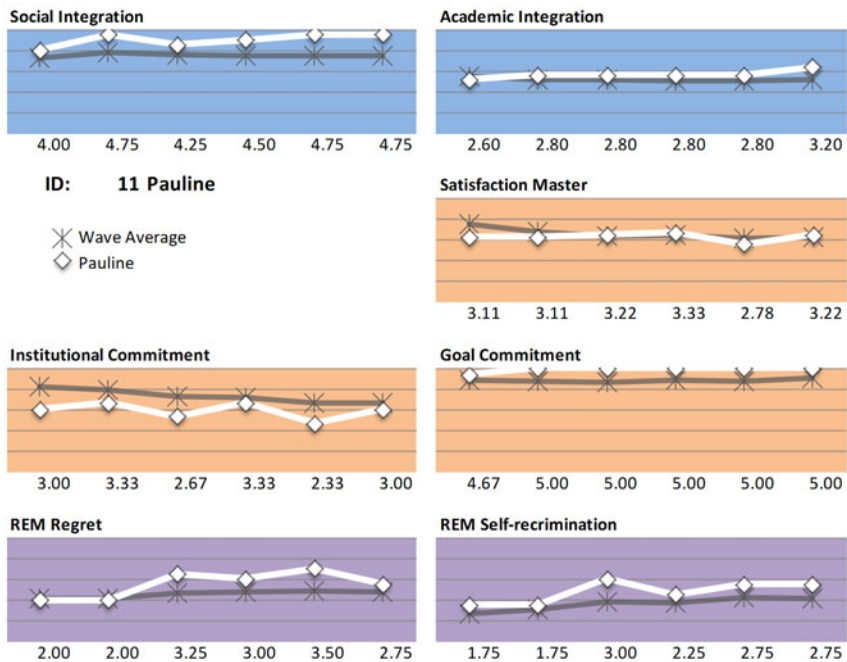


Figure 28: Overview of Integration and Evaluation Results for Respondent Pauline over the six Waves of Inquiry.

Pauline not only considered dropping out but also reported that she has actively searched for alternative programs. This suggests that the perception of lack of fit with the program was at some point large enough that it not only caused cognitive dissonance, but also another cognitive response – search for alternatives. Figure 28 shows that she, while consistently committed to the goal of Master’s education, showed a lower than average institutional commitment.

A small deviation from the average in satisfaction can be seen in Wave 5 which was also the lowest point in the evaluation of institutional commitment. Similarly, the levels of regret and self-recrimination were consistently above average after Wave 1. While her expectations were met, Pauline is a potential candidate to be considered locked-in according to the model of this work, which is supported by integration in both dimensions. Social integration as well as academic integration is consistent, even when evaluations show signs of cognitive dissonance.

While only these three students were identified to have significantly positive levels of *social integration* compared to the average in the previous section, it became clear

over the course of the individual visual examination that negative evaluation in some cases correlates with negative phases of integration. It was also shown that evaluation measures are explained by one or both dimensions of integration in Table 35. This phenomenon however appears to be idiosyncratic. In some cases the phase of negative evaluation coincides with a low, decreasing, or inverted U shaped evaluation of integration. In other cases, perceived integration remains stable around the average or even high, as in the individual cases presented.

Name	Results of Visual Examination			Match		
	Phase(s) of low Evaluation	Academic Integration	Social Integration	CSI (12 to 84)	D/O	Exp. met
Alexander	W4, W5	Decreasing	Stable	54	✓	✗
Andrea	W4	Low	Stable	27	✓	
Anna	W3, W4	Stable	High	36	✓	✗
Bo	W3	High	Stable	59	✓	
Lena	W5	Inv. U Shaped	Inv. U Shaped	65	✓°	
Louisa	W5	Stable	Stable	42	✓	✗
Maria	W3	High	Decreasing	46	✓	
Patrick	W5	Low	Inv. U Shaped	43	✓	✗
Pauline	W5	High	Stable	32	✓°	
Stefan	W4	Stable	Stable	43	✓	✗
Stella	W3	Stable	Decreasing	19	✓	✗
Vera	W5	Decreasing	Decreasing	25	✓	✗

° Student did not only Consider Dropping Out, but also Sent out Alternative Applications.

Table 37: Visual Examination Summary of Potentially Locked-in Students.

That is why the remaining students were examined visually as well. As summarized in Table 37, six individuals had stable or high perceptions of academic integration like in the case of Pauline. At the same time, seven cases of stable or high perceived social integration could be identified through social examination.

The results were matched with the students' susceptibility to social influence (CSI), which was theorized to be an individual predictor for the relevance of academic and social integration. Results in CSI above average were marked in bold. Except for Lena and Patrick, students with a high CSI were integrated at or above average in at least one of the two integration dimensions. Further research is necessary to examine this relationship in conjunction with the other personality traits.

The presented findings of the visual examination suggest that more students were locked in through social level mechanisms than significant effects suggest. They also suggest the relevance of academic integration at least for some students, but make a stronger case for the relevance of social integration. This further establishes these mechanisms' importance for the lock-in outcome hypothesized in Hypothesis 4. The occurrence of phase II proposed in the model, the existence of mechanisms for most of

these students and their reported consideration of drop out make them credible examples of locked in consumers in this service relationship. The phenomenon however is different for every individual, while adhering to the general process the model predicts.

4.2.4 Summary of Results from Empirical Study and Evaluation of Hypotheses

The empirical analysis of the model served two goals. First examining the existence of consumer lock-in in this empirical context and second affirming the underlying theoretical model of consumer lock-in developed for this work.

An initial analysis of the entry decision aspect confirmed the assumptions made in the qualitative interviews with students who had previously completed the program. The results supported the dimensions identified in the context adapted model. On a general level, the inquired data from the Master's program at FUB supports the notion that the decision case examined in this empirical study is in fact one that fits the dimensions of potentially path dependent decision contexts. Availability of alternatives, investment and relevance of individual history were found to be important.

The main focus of the analysis however was the process after entry into the service relationship. The process was examined in several steps. Grouping the individuals regarding their drop out tendency and expectation evaluation showed that these groups differed along evaluative dimensions, supporting Hypotheses 1 and 2:

H1: Consumers who report a tendency to drop out of the program display decreased (a) satisfaction with the master program, (b) commitment to staying with the institution, and (c) commitment to the goal of finishing a master's program. They (d) also exhibit regret regarding the program.

H2: Consumers who report that their expectations were not met by the program

These hypotheses however only supported the notion that in the aggregate, the groups differ along these dimensions. Some students in these groups provided evidence of a phase in their evaluative process that recovered subsequently. Further analysis focused on identification of locked in individuals in these groups that fit the model propositions and a more qualitative individual analysis. These individuals were examined further and it was found that

Hypothesis 3 that there are aggregate level differences in personality traits between locked-in students and non-locked in students was not supported:

H3: Individual personality properties are relevant in explaining potential lock-in (a), with increased preference for consistency (b) and increased susceptibility for social influence (c) facilitating lock-in.

Nonetheless, individual differences were found to exist in the individual fixed effects analyses, which may just not be explained through the personality traits inquired.

Following this analysis and examination of the potential lock-in and individual characteristics, the lock-in mechanisms were in the focus of attention. These are a central element of path dependence conceptions of lock-in. Theoretical reasoning supported the notion that social level lock-in mechanisms play a role in the empirical context, leading to Hypothesis 4:

H4: (a) Social Integration and (b) Academic Integration are relevant for student's lock-in to a program.

This hypothesis could be supported quantitatively, but the phenomenon is very idiosyncratic. It was in the individual analysis, where phases of cognitive dissonance could be considered, that more qualitative support for this hypothesis was found. Visual examination of potentially locked in students revealed that many of them had perception of integration along at least one dimension that was stable through phases of cognitive dissonance. Three students even had a perception of social integration significantly above the mean over all Waves of inquiry. Over all this provides strong support for this hypothesis.

In summary, this section showed that the phenomenon of consumer lock-in is difficult to capture empirically. The results of this extensive analysis support the notion that the phenomena of cognitive dissonance in phases of individual experience exist and are measurable. They point out individual differences in experience and relevance of integration for student perceptions of an experience. The section also supported the assumption made in the beginning, that the panel methodology is not only suitable, but necessary to identify the process features on the individual level. Simple ex-post examination would not have uncovered the process development that makes the phenomenon of consumer lock-in interesting.

The very premise of the theoretical work on the phenomenon showed that it – in the process sense – is limited to certain service relationships and within these relationships limited to a fraction of the consumers in these relationships. The refinement of the model schematically set up the individual level process in such a case, derived from the research discussed in Section 2. The goal of this section was testing this model in a

context where consumer lock-in can be expected. The elusiveness of the phenomenon led to choosing a combination of quantitative and qualitative methods for an explorative inquiry. In this sense, the empirical inquiry supported both the selection of context as well as the model understanding. It however had some limitations that are elaborated in the last section of this work.

5. Final Discussion

To recap the outcomes and contributions of this work, this final discussion first provides a short summary of the theoretical and empirical results along with their interpretation in Section 5.1. Following this summary, the contributions are discussed in Section 5.2, with regards to research and managerial implications of the results, the model, and the identification of the consumer lock-in phenomenon. Lastly, Section 5.3 discusses the limitations of this work and connects them to an outlook for future research considering the lock-in phenomenon in marketing, path dependence, and beyond.

5.1 Summary of Results

The central goal of this work was a theoretical elaboration of the elusive phenomenon of consumer lock-in on the individual perceptual level. The phenomenon was identified in that some individual decisions initiate an exclusive course of action – a path – that the individual eventually might be locked in to. It was found that according to a path dependent understanding, lock-in processes entail mechanisms that lock individuals to such a choice path, and that processes in this regard are inherently social. The individual level of path dependence was connected to cognitive dissonance on part of the decider regarding a choice. The people, who accompany consumers on such a path, may be a reason to stick to it, even when it becomes dissatisfying.

The result of the theoretical elaboration of this individual process, its consumption dimension and its social relevance is a *theoretical model* that takes the phase conception from path dependence research and applies it to an individual consumption process within a service relationship. It identifies the relevance of the consumer's history, decision process before and evaluation process during consumption. It conceptualizes the consumption process as a process of phases and helps identify individuals that experience a phase where a lack of fit with the process creates cognitive dissonance that may indicate path dependent lock-in. Instead of leaving the relationship, individuals may then adjust this dissonance cognitively because of lock-in mechanisms. When evaluation of the path normalizes this way, consumer lock-in sets in and the consumer persists in the process despite the perceived lack of fit. Sticking to the path, the consumer adjusts evaluations and may not feel the lack of fit he experienced or appear as though he lacked fit – he is path dependent.

Consumption decisions in services markets were examined as particularly fitting for this phenomenon in a marketing context, due to their particular properties. Some service contexts were considered more likely to foster this phenomenon. These entail a process and sequence – a preset path that consumers have to stay on if they want to benefit from the service. They also demand investment of time and effort, financial resources and exclusivity from consumers, while still offering them a market situation with alternatives to choose from. With regards to the social dimension, services with consumer participation and co-creation as well as an interpersonal component were considered to spur the social level lock-in mechanisms element of the model. The most fitting examples developed over the course of this work were *medical services*, *consulting services*, and *educational services*. The latter were selected as a field to apply the model empirically, in identifying locked-in consumers.

The phenomenon of consumer lock-in was examined in a longitudinal panel study in the context of higher education with students in a Master's program at FUB. The empirical results support the process notion formulated in the research propositions. Some of the students could be categorized as locked-in and the empirical evidence strongly suggests that the phenomenon occurred in the data collected in the panel study. The path dependence conception of a phase of cognitive dissonance and lock-in mechanisms are supported. The longitudinal nature of the inquiry gives additional credibility to the empirical results and interpretation, as it allowed for the process to be examined as it progressed. The findings support the notion that the process of consumer lock-in can be observed and identified it as path dependent.

5.2 Contributions

With the conceptual development and empirical test of the consumer lock-in model, the main contributions of this work can be identified on three levels.

First, the theoretical review showed that research is widely supporting the existence and importance of the lock-in phenomenon. There has however been limited research on individuals and consumers in path dependence, although individuals are essential part of the process. This work contributes to this limited body of research in systematically identifying features of the lock-in process and its mechanisms in individuals and consumers. The mechanisms were conceptualized in the form of switching costs in marketing research, to develop over the course of a relationship process, and to have the potential to lock consumers into a relationship who have a propensity to terminate the relationship due to lack of fit. The review showed that

switching and exit barriers can lead to a state of consumer lock-in at a certain point of a service relationship. General models of relationships are mainly based on the trust, commitment and satisfaction aspects of relationship maintenance and loyalty. The combination of their parts in a model of consumer lock-in, caused by mechanisms in consumer cognition, brings a more differentiated understanding to relationship maintenance research. Consumers then are expected to satisfice with what they cannot change and reduce their cognitive dissonance – a phenomenon that can be observed in both technological and organizational lock-in, as well as lock-in to repeated consumption decisions.

Secondly the definition of consumer lock-in and the general model of the process developed for this work is a contribution to research on this phenomenon. It is embedded in service- and marketing relationship research on the one hand and path dependence research on the other. The definition is aimed at the phenomenon in services but can serve as a basis for similar definitions of lock-in regarding goods or individual decisions outside the realm of consumption. The elaboration of the mechanisms on the individual and social level supports structuring the understanding of the drivers of individual lock-in and can equally inform research in both consumption and non-consumption relationships. An adapted model could be used for industrial and organizational markets, where exit barriers are even more prevalent than they are in consumer markets (Dwyer, Schurr, and Oh 1987). The combination of research streams generates insights for both sides, as the model motivates a closer examination of individual and social level effects in the understanding of individual path dependence. For *organizational path-dependence research*, examining the described interdependence effects on the individual level extends the understanding of path dependent behavior on the individual and the group level, which are the basic unit of any higher-level path dependence (Sydow et al., 2009). The resulting model can help to structure this individual level process. Research on this level has been limited, but some constituting features of individual processes in path dependence have been identified and elaborated (Roedenbeck, 2011; Roedenbeck and Holtmann, 2009).

The research approach proposed here can offer unique insights into the relevance of interdependence dynamics. While evaluating the common phenomenon of interdependence for its explanatory value in the development consumer lock-in, it goes beyond the idea of mere network externalities (Katz and Shapiro 1985). Network-based marketing with regards to consumer networks (S. Hill, Provost, and Volinsky 2006) as well as effects of social influence (Cialdini and Goldstein 2004) are also relevant for *consumer behavior*. The potential negative effect of such social influence,

however, received limited consideration in previous research. The idea of constraints and lock-in in consumption can be systematized by employing path dependence theory. This can help to better understand how these effects occur and how consumers are led into constrained choice paths.

Lastly the methodology used for the empirical part of this work and the results it provided are a contribution of this work. The process nature of the described phenomenon has limited previous research on individual path dependence, where panel research has not been done before. Employing a longitudinal in situ research methodology has advantages over ex-post or one-off studies of the lock-in phenomenon, which is described as a process both in path dependence and in marketing research. These areas of research can benefit from the approach offered to examine individual and consumer lock-in processes.

Next to the main contributions of this work to research on the phenomenon, it has managerial implications as well. These cover the strategic management of services with regards to relational aspects and consumer behavioral considerations. In their book, Shapiro and Varian (1999) dedicate an entire chapter to the management of consumer lock-in and its strategic dimensions, pointing to their relevance in information services. This work also outlined the managerial relevance of lock-in with regards to bonding strategies. Retention and attrition in complex services and service relationships make the strategic implications of such behavior particularly relevant, as exit and churn rates make growth evaluation a difficult task (Libai, Muller, and Peres 2009). The findings of this work can help identify, consider, and alleviate the effects of consumer lock-in with consumers.

While this study focused on behavior in a business to consumer environment, the same managerial implications apply to the business to business (B2B) sector. In this sector, intense and deep service relationships are common and it was identified that commonly considered metrics for loyalty may not explain enough variance (Williams et al. 2011). The model presented here adds important aspects and is applicable to the area of business to business services, where interdependence might be even more common and lock-in is bound to occur as well. A better comprehension of the reasons for – and the process behind – such behavior can help practitioners understand and alleviate its effects. Particularly in high-contact services, the identification, management and creation of processes that employ social and individual level mechanisms is a noteworthy implication. These can lock consumers into services but a

better understanding of them can also help identify consumers locked into competitive offerings.

The empirical context examined in this work provides an example for the described managerial implications in the field of educational services at universities. Clayton and Haley (2005) refer to the responsibility of students as well as universities for the beneficial outcomes of education. According to them, these responsibilities are not met when universities simply adapt a model of students as customers, but rather as one of many partners. They focus on students' individuality and responsibilities as a means to create the desired outcome. This moves away from a more marketing driven loyalty management consideration (Hennig-Thurau, Langer, and Hansen 2001). The model offered by this research does just that in helping identify individual students that may otherwise be left behind or counted as a success in an aggregate statistic. The lock-in model is useful for this and similar types of services to enrich the partnership and enable better participation.

5.3 Limitations and Research Outlook

There are limitations to the theoretical section, the model and the empirical results of this work that provide an avenue for future analyses, particularly with regards to the application, adaptation or extension of the developed general lock-in model. The goals of this work were describing and exploring a phenomenon referred to as consumer lock-in in the context of service relationships.

The theoretical part gave an outline of the research incorporated in the model development. It was focused on important individual decisions in a consumption context that entail entering a relationship process. Such decisions are made by everyone but they are not very frequent. As the theoretical review was limited to such decisions, it is only applicable to a fraction of the consumption decisions made, which poses a limitation to the generalizability of the process model. Future research can base considerations in other areas on this model but the limitations of the model, as for any model, are the simplistic description of the complex phenomenon and the expected to be limited determinism of the observed phenomenon. Furthermore, repeated decisions, goods markets, B2B markets, all these areas are interesting for an inquiry regarding potential for lock-in, however not in the process understanding of this work.

While the model has value for describing and identifying this phenomenon, it has also limited value for predicting a path dependent or locked in outcome in individuals. The idiosyncrasies of individuals appear to go beyond personality and traits, as the

rejection of the third research hypothesis suggests. Context and individual aspects were nonetheless identified as relevant, but the phenomenon is as interesting as it is complex. Future research should focus on the element of prediction of consumer lock-in outcomes.





The empirical results supported most of the premises of the model, one limitation however is the sample size achieved. The extent of the panel study in terms of research effort limited the capacity. Future research could drive a more extensive study of the phenomenon to test if the propositions and model conception hold here as well. Furthermore, research should focus on inefficient behavior on the individual level, as it can be observed in reality and has previously been conceptualized for research (Lee, Hwang, and Kim 2005). Different types of services should be examined for their relevance of mechanisms on the individual and social level, with a longitudinal empirical approach promising the necessary detail for understanding the process. This serves a better understanding of consumer engagement in co-creation, a dominant concept considered in current marketing research (e.g. Payne, Storbacka, and Frow 2007). Also, dissatisfaction due to service failure and subsequent recovery fits this model and may be worth pursuing regarding its implications for lock-in (Priluck and Lala 2009).

Regarding the applicability to business-to-business (B2B) relationships, here relationships are particularly important in driving consumers' provider choice (Wuyts, Verhoef, and Prins 2009). Future research can adapt the developed model to business-to-business consumption processes, as these often exhibit strong interpersonal and relational components and are described as relationships (Lam and Shankar 2004). Individual processes, however, are often replaced by group processes due to a higher complexity of the decision making. Lock-in in B2B marketing contexts was examined before, focus here lies on the technological and contractual lock-in and may have negative implications for both the customer as well as the provider (Woisetschläger et al. 2010). Mallach (2013) considered path dependence due to relational rents in B2B contexts and identifies switching costs as relevant, supporting the relevance of the model developed of this work for the B2B context.

Lastly further research in these areas can help individuals making better choices by identifying rigidities regarding past in finding consumption process features and social mechanisms they are unaware of. While this work provided initial evidence for the phenomenon, more research is necessary to support the conception in other contexts. The development of the general theoretical model, while focused on the described

types of relationships, is general enough to be applied to other examples of individual decisions with potential for lock-in. As in the empirical example of this work, it can be adapted to help identify the individuals whose course of action provides evidence of path dependence, which may benefit all involved.

Appendix

Appendix A	Icon Symbols
Icon Symbol	Used for/Source (Retrieved from http://www.iconarchive.com)
	People and Store/Provider by Aha-Soft Iconset: People (10 icons), Large Home (10 icons), License: Free for non-commercial use.
	Lock-in Symbol by La Glanz Studio Iconset: 3D Icons (11 icons), License: Freeware, Commercial usage: Allowed.
	Education and Check Mark/Decision by Oxygen Team Iconset: Oxygen Icons (883 icons), License: GNU Lesser General Public License, Commercial usage: Allowed.
	Research by Fast Icon (http://www.fasticon.com) Iconset: Green Ville Icons (25 icons), License: Linkware , Commercial usage: Allowed

Appendix B Single-Inquiry Measures

The questions are shown in italics and the German translations used in the survey are in regular font style.

Wave 1	<p>Student Satisfaction Scale – 9 + 1 Items</p> <p><i>Question: How satisfied were you – all in all – with your bachelor’s program?</i></p> <p>Wie zufrieden waren Sie – alles in allem betrachtet – mit Ihrem Bachelorstudium?</p> <ol style="list-style-type: none"> <i>How satisfied were you generally speaking with the faculty atmosphere?</i> Wie zufrieden waren Sie im Allgemeinen mit der Atmosphäre am Fachbereich? <i>How satisfied were you generally speaking with the possibilities for provision of information about the program?</i> Wie zufrieden waren Sie im Allgemeinen mit den Informationsbeschaffungsmöglichkeiten zum Studium? <i>How satisfied were you generally speaking with exam preparation, -contents and evaluation?</i> Wie zufrieden waren Sie im Allgemeinen mit der Prüfungsvorbereitung, -inhalten und-bewertung? <i>How satisfied were you generally speaking with the lecturers?</i> Wie zufrieden waren Sie im Allgemeinen mit den Dozenten? <i>How satisfied were you generally speaking with the assistance?</i> Wie zufrieden waren Sie im Allgemeinen mit der Betreuung? <i>How satisfied were you generally speaking with university flair?</i> Wie zufrieden waren Sie im Allgemeinen mit dem Flair der Universität? <i>How satisfied were you generally speaking with the exam management (administrative)?</i> Wie zufrieden waren Sie im Allgemeinen mit dem Prüfungsmanagement (organisatorisch)? <i>How satisfied were you generally speaking with the lectures?</i> Wie zufrieden waren Sie im Allgemeinen mit den Lehrveranstaltungen? <i>How satisfied were you generally speaking with the connection of theory and practice?</i> Wie zufrieden waren Sie im Allgemeinen mit der Verbindung zwischen Theorie und Praxis? <i>How satisfied were you generally with your bachelor’s program?</i> Wie war Ihre Gesamtzufriedenheit mit dem Bachelorstudium? - This question was not included in calculation of the question score as it inquires the overall construct- <p><i>Questions were answered on 5-point Likert scales, ranging from completely dissatisfied to completely satisfied. Final scores were computed based on the first 9 items.</i></p>
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Wave 1 Expectations – 5 Items

Question: When you think of the future course and the terms of your Master's program, how much you agree with the following statements about your personal expectations?

Wenn Sie an den künftigen Verlauf und an die Bedingungen Ihres Masterstudiums denken, wie sehr stimmen Sie den folgenden Aussagen bezüglich Ihrer persönlichen Erwartungen zu?

1. *I expect to get to know my fellow students better than I am used to from my Bachelor's program.*
Ich erwarte, dass ich meine Kommilitonen besser kennenlernen werde, als ich es aus meinem Bachelor gewohnt bin.
2. *I expect feel closer to the teachers than I am used to from my Bachelor's program.*
Ich erwarte, dass ich mich den Dozenten näher fühle, als ich es aus meinem Bachelor gewohnt bin.
3. *I expect a better understanding of the study content coherence due to the program format.*
Ich erwarte, dass ich durch das Programmformat ein besseres Verständnis für den Zusammenhang der Studieninhalte habe.
4. *I expect a greater sense of camaraderie among the students than I am used to from my Bachelor's program.*
Ich erwarte, dass sich ein größeres Gefühl der Kameradschaft unter den Studenten einstellen wird, als ich es aus meinem Bachelor gewohnt bin.
5. *I expect to enjoy the lectures and seminars more than I am used to from my Bachelor's program.*
Ich erwarte, dass mir die Vorlesungen und Seminare besser gefallen werden, als in meinem Bachelor.

Questions were answered on 5-point Likert scales, ranging from completely disagree to completely agree.

Wave 6 Expectation Evaluation – 5 Items

Question: If you think about your expectations regarding your Master's program, to what degree were they met with respect to the following statements?

Wenn Sie an Ihre Erwartungen bezüglich der Bedingungen Ihres Masterstudiums denken, wie sehr wurden diese bezüglich folgender Aussagen erfüllt?

1. *I got to know my fellow students better than I was used to from my Bachelor's program.*
Ich habe meine Kommilitonen besser kennengelernt, als ich es aus meinem Bachelor gewohnt war.
2. *I felt closer to the teachers than I was used to from my Bachelor's program.*
Ich fühle mich den Dozenten näher, als ich es aus meinem Bachelor gewohnt war.
3. *I had a better understanding of the study content coherence due to the program format.*
Ich hatte durch das Programmformat ein besseres Verständnis für den Zusammenhang der Studieninhalte.
4. *There was a greater sense of camaraderie among the students than I was used to from my Bachelor's program.*
Es gab ein größeres Gefühl der Kameradschaft unter den Studenten, als ich es aus meinem Bachelor gewohnt war.
5. *I enjoyed the lectures and seminars more than I did my Bachelor's program.*
Mir haben die Vorlesungen und Seminare besser gefallen, als in meinem Bachelor.

Questions were answered on 5-point Likert scales, ranging from completely disagree to completely agree.

Wave 2 Personality (Ten-Item Personality Inventory-TIPI) – 10 Items

Question: Here are a number of personality traits that may or may not apply to you.

Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Hier ist eine Reihe von Persönlichkeitsmerkmalen aufgeführt, die auf Sie zutreffen könnten, oder auch nicht. Bitte schreiben Sie eine Zahl neben jede Aussage, in welchem Umfang Sie dieser Aussage zustimmen oder nicht zustimmen. Sie sollten bewerten, in welchem Umfang beide Eigenschaften gemeinsam auf Sie zutreffen, auch wenn eine stärker als die andere zutrifft.

- | | |
|---|--|
| 1. <i>Extraverted, enthusiastic.</i>
Extrovertiert, enthusiastisch. | 6. <i>Reserved, quiet.</i>
Reserviert, ruhig. |
| 2. <i>Critical, quarrelsome.</i>
Kritisch, streitlustig. | 7. <i>Sympathetic, warm.</i>
Sympathisch, warm. |
| 3. <i>Dependable, self-disciplined.</i>
Zuverlässig, diszipliniert. | 8. <i>Disorganized, careless.</i>
Unorganisiert, sorglos. |
| 4. <i>Anxious, easily upset.</i>
Ängstlich, leicht aufgebracht. | 9. <i>Calm, emotionally stable.</i>
Gelassen, emotional stabil. |
| 5. <i>Open to new experiences, complex.</i>
Offen gegenüber neuen Erfahrungen,
vielschichtig. | 10. <i>Conventional, uncreative.</i>
Konventionell, un kreativ. |

The questions were answered on a 7-point rating scale, ranging from completely disagree to completely agree.

Wave 1

Consumer Susceptibility to Interpersonal Influence (CSI)

Question: How much do you agree with the following statements about your general purchasing behavior?

Wie sehr stimmen Sie folgenden Aussagen über ihr allgemeines Kaufverhalten zu?

- I often consult other people to help choose the best alternative available from a product class.*
Ich befrage oft andere Leute, um mir zu helfen, die beste Alternative aus einer Produktklasse zu wählen.
- If I want to be like someone, I often try to buy the same brands that they buy.*
Wenn ich wie jemand sein möchte, versuche ich oft die gleichen Marken zu kaufen.
- It is important that others like the products and brands I buy.*
Es ist wichtig, dass andere die Produkte und Marken die ich kaufe mögen.
- To make sure I buy the right product or brand, I often observe what others are buying and using.*
Um sicher zu gehen, dass ich das richtige Produkt/Marke kaufe, beobachte ich oft, was andere kaufen und benutzen.
- I rarely purchase the latest fashion styles until I am sure my friends approve of them*
Ich kaufe selten die neuesten Bekleidungsstile, bis ich sicher bin, dass meine Freunde sie gut finden.
- I often identify with other people by purchasing the same products and brands they purchase.*
Ich identifiziere mich oft mit anderen Leuten, indem ich die gleichen Produkte und Marken wie sie kaufe.
- If I have little experience with a product, I often ask my friends about the product.*
Wenn ich wenig Erfahrung mit einem Produkt habe, frage ich oft meine Freunde.
- When buying products, I generally purchase those brands that I think others will approve of.*
Wenn ich Produkte kaufe, kaufe ich in der Regel die Marken, die andere gut finden.
- I like to know what brands and products make good impressions on others.*
Ich mag es zu wissen, welche Produkte und Marken einen guten Eindruck auf andere machen.
- I frequently gather information from friends or family about a product before I buy.*
Ich sammle oft Informationen von Freunden oder Familienmitgliedern über Produkte, bevor ich etwas kaufe.
- If other people can see me using a product, I often purchase the brand they expect me to buy.*
Wenn andere Leute sehen dass ich ein Produkt benutze, kaufe ich oft die Marke, die sie von mir erwarten.
- I achieve a sense of belonging by purchasing the same products and brands that others purchase.*
Ich bekomme ein Zugehörigkeitsgefühl, wenn ich die gleichen Produkte und Marken wie andere kaufe.

The questions were answered on 7-point Likert scales, ranging from completely disagree to completely agree.

Wave 5 Preference for Consistency (PFC)

Question: Please first indicate how much you agree with the following statements?

Bitte geben Sie zunächst an, wie sehr Sie den folgenden Aussagen zustimmen.

1. *I prefer to be around people whose reactions I can anticipate.*
Ich bevorzuge es, mit Menschen zusammen zu sein, deren Reaktionen für mich erwartbar sind.
2. *It is important to me that my actions are consistent with my beliefs.*
Es ist mir wichtig, dass meine Handlungen im Einklang mit meinen Überzeugungen sind.
3. *Even if my attitudes and actions seemed consistent with one another to me, it would bother me if they did not seem consistent in the eyes of others.*
Selbst wenn in meinen Augen mein Denken und Handeln in Einklang ist, würde es mich stören, wenn sie nicht in den Augen anderer konsistent scheinen.
4. *It is important to me that those who know me can predict what I will do.*
Es ist mir wichtig, dass mein Verhalten für die, die mich kennen, berechenbar ist.
5. *I want to be described by others as a stable, predictable person.*
Ich will von anderen als eine stabile, berechenbare Person beschrieben werden.
6. *Admirable people are consistent and predictable.*
Bewundernswerte Menschen sind konsistent und berechenbar.
7. *The appearance of consistency is an important part of the image I present to the world.*
Der Eindruck von Konsistenz ist ein wichtiger Teil des Bildes, das ich der Welt zeige.
8. *It bothers me when someone I depend upon is unpredictable.*
Es stört mich, wenn jemand unberechenbar ist, auf den ich angewiesen bin.
9. *I don't like to appear as if I am inconsistent.*
Ich möchte nicht inkonsistent erscheinen.
10. *I get uncomfortable when I find my behavior contradicts my beliefs.*
Es ist mir unangenehm, wenn ich merke, dass mein Verhalten meinen Überzeugungen widerspricht.
11. *An important requirement for any friend of mine is personal consistency.*
Eine wichtige Voraussetzung für jeden Freund von mir ist persönliche Konsistenz.
12. *I typically prefer to do things the same way.*
Ich bevorzuge es normalerweise, Dinge auf die gleiche Art und Weise zu tun.
13. *I dislike people who are constantly changing their opinions.*
Ich mag Menschen nicht, die ständig ihre Meinungen ändern.
14. *I want my close friends to be predictable.*
Ich möchte, dass meine engen Freunde berechenbar sind.
15. *It is important to me that others view me as a stable person.*
Es ist mir wichtig, dass andere mich als eine stabile Person ansehen.
16. *I make an effort to appear consistent to others.*
Ich bemühe mich um anderen konsistent zu erscheinen.
17. *I'm uncomfortable holding two beliefs that are inconsistent.*
Es ist mir unangenehm, wenn zwei meiner Überzeugungen inkonsistent sind.
18. *It doesn't bother me much if my actions are inconsistent.*
Es ist mir egal, wenn meine Handlungen inkonsistent sind.

The original PFC scale employs 9-point Likert scales, ranging from strongly disagree to strongly agree. In this work questions were answered on 5-point Likert scales, ranging from completely disagree to completely agree. Order of questions in final questionnaire: 5, 11, 15, 18, 16, 13, 12, 9, 1, 2, 17, 14, 10, 8, 7, 6, 3, 2.

Wave 1 Decision Style – Situation Specific Thinking Style (SSTS)

Question: How much would you agree with the following statements, looking back at the decision process regarding your master's program (subject/location)?

Rückblickend auf Ihren Entscheidungsprozess bei der Auswahl des Masterstudiums (Studienfach und -ort), wie sehr würden Sie folgenden Aussagen zustimmen?

1. *I reasoned things out carefully.*
Ich habe genau darüber nachgedacht und geschlussfolgert.
2. *I tackled this task systematically.*
Ich bin die Entscheidung systematisch angegangen.

3. *I figured things out logically.*
Ich habe es logisch durchdacht.
4. *I approached this task analytically.*
Ich bin analytisch an die Entscheidung herangegangen.
5. *I was very focused on the steps involved in doing this task.*
Ich habe mich schrittweise der Entscheidung genähert.
6. *I applied precise rules to deduce the answers.*
Ich habe die Entscheidung anhand konkreter Regeln abgeleitet.
7. *I was very focused on what I was doing to arrive at the answers.*
Ich habe mich der Aufgabe konzentriert genähert.
8. *I was very aware of my thinking process.*
Mein Denkprozess war mir sehr bewusst.
9. *I arrived at my answers by carefully assessing the information in front of me.*
Ich habe die vorhandenen Informationen eingehend geprüft.
10. *I used clear rules.*
Ich habe klare Regeln verwendet.
11. *I used my gut feelings.*
Ich habe mein Bauchgefühl genutzt.
12. *I went by what felt good to me.*
Ich bin danach gegangen, was sich gut anfühlte.
13. *I trusted my hunches.*
Ich traute meinem sechsten Sinn.
14. *I relied on my sense of intuition.*
Ich verließ mich auf meine Intuition.
15. *I relied on my first impressions.*
Ich habe mich auf erste Eindrücke verlassen.
16. *I used my instincts.*
Ich nutzte meinen Instinkt.
17. *I used my heart as a guide for my actions.*
Meine Handlungen folgten meinem Herzen.
18. *I had flashes of insight.*
Ich hatte einen Geistesblitz.
19. *Ideas just popped into my head.*
Ich hatte eine plötzliche Idee.
20. *I used free-association, where one idea leads to the next.*
Ich ging nach freier Assoziation vor, wobei eine Idee zur nächsten führt.

Order of questions in final survey: 5, 20, 8, 4, 14, 1, 15, 7, 17, 2, 19, 16, 11, 6, 9, 18, 10, 13, 3, 12.

Wave 1 Alternatives

Question 1: How many applications did you submit for Master's programs?

Wie viele Bewerbungen haben Sie für Masterprogramme abgeschickt?

about _____ applications

ca. _____ Bewerbungen

Question 2: For how many Master's programs did you receive a letter of admission?

Für wie viele Masterprogramme haben Sie eine Zulassung erhalten?

_____ admissions

_____ Zulassungen

Wave 1 Investment – Effort put into the decision

Question 1: Where did you acquire the higher education entrance qualification?

Wo haben Sie die Hochschulreife erworben?

Question 2: Where did you acquire your Bachelor's degree?

Wo haben Sie Ihren Bachelor gemacht?

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. <i>Berlin area</i>
Land Berlin 2. <i>Brandenburg area</i>
Land Brandenburg 3. <i>Other areas (in Germany)</i>
Andere Bundesländer 4. <i>Outside Germany</i>
Außerhalb Deutschlands | <ol style="list-style-type: none"> 1. <i>At the same location</i>
Am gleichen Ort 2. <i>In another place, in Berlin</i>
An einem anderen Ort, und zwar in Berlin 3. <i>In another area</i>
In einem anderen Bundesland 4. <i>In another location outside Germany</i>
An einem anderen Ort außerhalb Deutschlands |
|--|--|

One option per question could be selected. The following answer key was used to categorize the answers by investment (Question 1 - Question 2): Low (1-1, 1-2, 2 - 2); Medium (1 - 3, 1 - 4, 2 - 1, 3 - 2); High (2 - 3, 3 - 3, 3 - 1, 4 - 2, 4 - 3); Very High (2 - 4, 3 - 4, 4 - 1, 4 - 4).

Wave 1 and Wave 6 Drop out Consideration

Question 1: Did you consider switching/dropping out during your Bachelor's studies?

Haben Sie während Ihres Bachelor Studiums über Studienwechsel/Abbruch nachgedacht?

1. *No.*
Nein.
2. *Yes, but I have not looked around for alternatives.*
Ja, ich habe mich aber nicht nach Alternativen umgeschaut.
3. *Yes, I have looked around and I applied.*
Ja, ich habe mich umgeschaut und beworben.
4. *Yes, I have switched/cancelled during the Bachelor's.*
Ja, ich habe im Bachelor einen Wechsel/Abbruch vorgenommen.

One answer could be selected. Question 1 (inquired in Wave 1) offered options 1 through 4, Question 2 (inquired in Wave 6) only options 1 through 3.

Question 2: Did you consider switching/dropping out during your Master's studies so far?

Haben Sie während Ihres Master Studiums bis zum heutigen Zeitpunkt über Studienwechsel/Abbruch nachgedacht?

Wave 1 and Wave 4 Word Clouds

Question 1: Please name the three aspects of this Master's program most important for your decision.

Nennen Sie bitte die drei Aspekte an diesem Masterprogramm, die für Ihre Entscheidung am wichtigsten waren.

1. _____
2. _____
3. _____

The question could be answered in free text, no suggestions for appropriate replies were provided. Question 1 was inquired in Wave 1 and question 2 was inquired in Wave 4.

Question 2: Please name three aspects of the Master's program in management and marketing that could be causes of dissatisfaction among the students.

Bitte nennen Sie bitte die drei Aspekte an dem Masterprogramm Management und Marketing, die Ursachen für Unzufriedenheit in der Studentenschaft sein könnten.

Appendix C Continuous Inquiry Measures

The questions are shown in italics and the German translations used in the survey are in regular font style. Some continuous questions were asked in two separate item batteries: The agreement battery¹ and the satisfaction with aspects battery². Some items were reverse coded¹.

Regret and Self Recrimination – REM (Regret Experience Measure) – 8 Items

Question: Please rate your decision for the master's program retrospectively.

Bitte beurteilen Sie Rückblickend Ihre Entscheidung für das Masterprogramm.

- 1. I regret my choice.*
Ich bereue meine Entscheidung.
- 2. I think I made an error in judgment.*
Ich denke, ich habe einen Fehler bei der Beurteilung gemacht.
- 3. Before I received outcome feedback, I knew that I had made an excellent decision.^r*
Bevor ich die Folgen kannte, wusste ich, dass ich eine ausgezeichnete Entscheidung getroffen hatte.
^r
- 4. I am confident I made the best choice based on the information I had available.^r*
Ich bin zuversichtlich, dass ich die beste Entscheidung auf Basis der verfügbaren Informationen getroffen habe.
^r
- 5. Before I should have chosen differently.*
Ich hätte damals anders entscheiden sollen.
- 6. I knew that I should have chosen differently.*
Ich wusste, dass ich anders hätte entscheiden sollen.
- 7. I really feel good about my choice.^r*
Ich fühle mich wirklich gut mit meiner Entscheidung.
^r
- 8. I really feel that I was making an error when I made that choice.*
Ich habe wirklich das Gefühl, dass ich mit der Entscheidung einen Fehler gemacht habe.

Questions were answered on 5-point Likert scales, ranging from completely disagree to completely agree.

Items 1, 3, 4, and 7 measured general regret and items 2, 5, 6, and 8 measured self-recrimination. The order of questions in the final questionnaires was 4, 2, 6, 8, 1, 3, 5, 7.

Satisfaction with Master's Program – 9+1 Items

Question: How satisfied are you – at the moment – with your master's program?

Wie zufrieden sind Sie – zum aktuellen Zeitpunkt – mit Ihrem Masterstudium?

- 1. How satisfied were you generally speaking with the faculty atmosphere?*
Wie zufrieden waren Sie im Allgemeinen mit der Atmosphäre am Fachbereich?
- 2. How satisfied were you generally speaking with the possibilities for provision of information about the program?*
Wie zufrieden waren Sie im Allgemeinen mit den Informationsbeschaffungsmöglichkeiten zum Studium?
- 3. How satisfied were you generally speaking with exam preparation, -contents and evaluation?*
Wie zufrieden waren Sie im Allgemeinen mit der Prüfungsvorbereitung, -inhalten und-bewertung?
- 4. How satisfied were you generally speaking with the lecturers?*
Wie zufrieden waren Sie im Allgemeinen mit den Dozenten?
- 5. How satisfied were you generally speaking with the assistance?*
Wie zufrieden waren Sie im Allgemeinen mit der Betreuung?
- 6. How satisfied were you generally speaking with university flair?*
Wie zufrieden waren Sie im Allgemeinen mit dem Flair der Universität?
- 7. How satisfied were you generally speaking with the exam management (administrative)?*
Wie zufrieden waren Sie im Allgemeinen mit dem Prüfungsmanagement (organisatorisch)?
- 8. How satisfied were you generally speaking with the lectures?*
Wie zufrieden waren Sie im Allgemeinen mit den Lehrveranstaltungen?
- 9. How satisfied were you generally speaking with the connection of theory and practice?*
Wie zufrieden waren Sie im Allgemeinen mit der Verbindung zwischen Theorie und Praxis?

10. *How satisfied were you generally with your master's program?*

Wie war Ihre Gesamtzufriedenheit mit dem Masterstudium?

Questions were answered on 5-point Likert scales, ranging from completely dissatisfied to completely satisfied. The first wave of inquiry included an "I don't know" Option, because some questions might not yet have been viable.

Institutional Commitment – 4 Items (3 items in final design)

Questions: Please indicate how much you agree with the following statements ¹ / Please answer these questions regarding your satisfaction with various aspects of the Master's program ²

Bitte geben Sie an, wie sehr Sie den folgenden Aussagen zustimmen ¹ / Bitte beantworten Sie diese Fragen zu ihrer Zufriedenheit mit einzelnen Aspekten des Masterprogramms. ²

1. *It is likely that I will register at _____ next fall.*
- This item was left out because it didn't apply to the empirical design -
2. *I prefer to graduate from some other university than from _____.* ^{1 r}
Es ist mir wichtig an der Freien Universität meinen Master zu machen und nicht an einer anderen Universität. ¹
- The original item was rephrased to a positive statement and coded accordingly -
3. *I am pleased now about my decision to attend _____ in particular.* ²
Wie zufrieden sind Sie bislang mit Ihrer Entscheidung an der Freien Universität zu studieren? ²
4. *I wish I were at another university.* ^{1 r}
Ich wünschte, ich wäre an einer anderen Universität. ^{1 r}

Questions 2 and 4 were answered on 5-point Likert scales, ranging from completely disagree to completely agree. Question 3 was answered on 5-point Likert scales ranging from completely dissatisfied to completely satisfied.

Goal Commitment – 3 Items

Questions: Please indicate how much you agree with the following statements ¹ / Please answer these questions regarding your satisfaction with various aspects of the Master's program ²

Bitte geben Sie an, wie sehr Sie den folgenden Aussagen zustimmen ¹ / Bitte beantworten Sie diese Fragen zu ihrer Zufriedenheit mit einzelnen Aspekten des Masterprogramms. ²

1. *I am pleased now about my decision to go to college.* ²
Wie zufrieden sind Sie bislang mit Ihrer grundsätzlichen Entscheidung für eine Universitätsausbildung? ²
2. *Lately I have been having doubts regarding the value of a college education.* ^{1 r}
In letzter Zeit habe ich Zweifel am Wert einer Universitätsausbildung. ^{1 r}
3. *I find myself giving considerable thought to taking time off from college and finishing later.* ^{1 r}
Ich überlege oft, eine Pause von der Hochschule zu machen und meinen Abschluss später zu machen. ^{1 r}

Question 1 was answered on 5-point Likert scales ranging from completely dissatisfied to completely satisfied. Questions 2 and 3 were answered on 5-point Likert scales, ranging from completely disagree to completely agree.

Social Integration – 5 Items

Questions: Please indicate how much you agree with the following statements ¹ / Please answer these questions regarding your satisfaction with various aspects of the Master's program ²

Bitte geben Sie an, wie sehr Sie den folgenden Aussagen zustimmen. ¹ / Bitte beantworten Sie diese Fragen zu ihrer Zufriedenheit mit einzelnen Aspekten des Masterprogramms. ²

1. *It has been difficult for me to meet and make friends with other students.* ^{1 r}
Es ist schwer für mich, die anderen Studenten zu treffen und mich mit ihnen anzufreunden. ^{1 r}
2. *The student friendships I have developed at _____ have been personally satisfying.* ²
Wie zufrieden sind Sie bislang mit den studentischen Freundschaften die Sie bisher geschlossen haben? ²
3. *Since coming to _____ I have developed close personal relationships with other students.* ¹
Seit ich an der Freien Universität bin, habe ich enge persönliche Beziehungen zu den anderen Studenten entwickelt. ¹

4. *My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values.*¹
Meine zwischenmenschlichen Beziehungen zu anderen Studenten hatten positiven Einfluss auf mein persönliches Wachstum, meine Werte und meine Einstellungen.¹
5. *My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.*¹
Meine zwischenmenschlichen Beziehungen zu anderen Studenten haben positiven Einfluss auf mein geistiges Wachstum und mein Interesse an Wissen.¹

Academic Integration – 5 Items

*Questions: Please indicate how much you agree with the following statements.*¹ / *Please answer these questions regarding your satisfaction with various aspects of the Master's program.*²
Bitte geben Sie an, wie sehr Sie den folgenden Aussagen zustimmen.¹ / Bitte beantworten Sie diese Fragen zu ihrer Zufriedenheit mit einzelnen Aspekten des Masterprogramms.²

1. *My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations.*¹
Mein Kontakt mit den Dozenten außerhalb der Lehrveranstaltungen hatte positiven Einfluss auf meine Karriereziele und meinen Berufswunsch.¹
2. *I am satisfied with the opportunities to meet and interact informally with faculty members.*²
Wie zufrieden sind Sie bislang mit den Möglichkeiten informell mit Dozenten zu interagieren?²
3. *Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas.*¹
Die meisten Dozenten, mit denen ich in Kontakt bin, sind daran interessiert, Studenten zu helfen, sich auch außerhalb des akademischen Bereiches weiterzuentwickeln.¹
4. *My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in idea.*¹
Mein Kontakt mit den Dozenten außerhalb der Lehrveranstaltungen hatte positiven Einfluss auf mein geistiges Wachstum und mein Interesse an Wissen.¹
5. *My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.*¹
Mein Kontakt mit den Dozenten außerhalb der Lehrveranstaltungen hatte positiven Einfluss auf mein persönliches Wachstum, meine Werte und meine Einstellungen.¹

Additional Items in agreement battery

Question: Please indicate how much you agree with the following statements.
Bitte geben Sie an, wie sehr Sie den folgenden Aussagen zustimmen.

1. *I see myself as part of a community in my Master's program.*
Ich sehe mich als Teil einer Gemeinschaft in meinem Masterprogramm.
2. *My friends support me in staying at this university.*
Meine Freunde unterstützen mich darin, an dieser Universität zu bleiben.
3. *My family approves of my attending this university.*
Meine Familie findet es gut, dass ich diese Universität besuche.
4. *The contents of this Master's program are exactly what I wanted.*
Das Master Programm ist inhaltlich genau, was ich wollte.
5. *It is important to me to get my Master's degree.*
Es ist mir wichtig, meinen Masterabschluss zu machen.
6. *I feel overwhelmed with the workload in this Master's program.*
Ich fühle mich mit der Arbeitsbelastung in diesem Masterstudium überfordert.
7. *I already know exactly what I want to focus on in the Master's program.*
Ich weiß bereits genau, welchen Schwerpunkt ich im Masterprogramm wählen will.

Questions were answered on 5-point Likert scales, ranging from completely disagree to completely agree.

Additional Items in satisfaction battery

Question: Please answer these questions regarding your satisfaction with various aspects of the Master's program.

Bitte beantworten Sie diese Fragen zu ihrer Zufriedenheit mit einzelnen Aspekten des Masterprogramms.

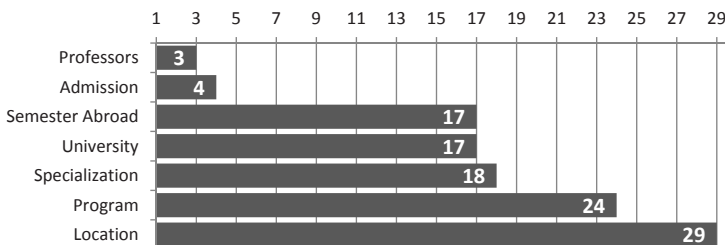
1. *How satisfied are you with the interaction with the other Master's students so far?*
Wie zufrieden sind Sie bislang mit der Interaktion mit den anderen Masterstudenten? ²
2. *How satisfied are you with the availability of social activities at the university so far? ²*
Wie zufrieden sind Sie bislang mit der Verfügbarkeit von sozialen Aktivitäten an der Universität?
3. *How satisfied are you with the sense of community among the Master's students so far?*
Wie zufrieden sind Sie bislang mit dem Gemeinschaftssinn unter den Masterstudenten?
4. *How satisfied are you with the integration of scientific knowledge into teaching so far?*
Wie zufrieden sind Sie bislang mit der Einbindung wissenschaftlicher Erkenntnisse in die Lehre?
5. *How satisfied are you with the possibilities of self-determined academic work so far?*
Wie zufrieden sind Sie bislang mit der Möglichkeit selbstbestimmt akademisch zu arbeiten?
6. *How satisfied are you with the quality of teaching with regards to content so far?*
Wie zufrieden sind Sie bislang mit der inhaltlichen Qualität der Lehre?
7. *How satisfied are you with your academic performance so far?*
Wie zufrieden sind Sie bislang mit ihren akademischen Leistungen?
8. *How satisfied are you with your social life outside the university so far?*
Wie zufrieden sind Sie bislang mit ihrem sozialen Leben außerhalb der Universität?
9. *How satisfied are you with the feedback on your academic performance so far?*
Wie zufrieden sind Sie bislang mit dem Feedback zu ihren akademischen Leistungen?
10. *How satisfied are you with the interaction with the university- and course administration so far?*
Wie zufrieden sind Sie bislang mit der Interaktion mit der Universitäts- und Studiengangsverwaltung?

Questions were answered on 5-point Likert scales ranging from completely dissatisfied to completely satisfied.

Appendix D Imputation by Expectation Maximization – Results of Little's MCAR test.

	Wave 1		Wave 2		Wave 3		Wave 4		Wave 5		Wave 6	
	DF	Sig.	DF	Sig.	DF	Sig.	DF	Sig.	DF	Sig.	DF	Sig.
Satisfaction Master	111	.702	0	.000	9	.367	9	.540	18	.502	9	.623
Institutional Commitment	0	.000	0	.000	2	.104	0	.000	0	.000	1	.232
Goal Commitment	0	.000	2	.104	2	.760	2	.387	0	.000	0	.000
REM Regret	0	.000	0	.000	0	.000	0	.000	0	.000	0	.000
REM Self	0	.000	0	.000	0	.000	0	.000	0	.000	3	.025
Recrimination												
Social Integration	0	.000	0	.000	0	.000	0	.000	0	.000	3	.002
Academic Integration	0	.000	0	.000	0	.000	0	.000	0	.000	1	.221

Appendix E Detailed Results for Word Cloud regarding Reasons for Decision in Favor of the Master's Program, in absolute Numbers.



Appendix F Analysis of Expectations

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Gettoknow_Pre	Between Groups	1,561	1	1,561	1,115	,299
	Within Groups	44,821	32	1,401		
	Total	46,382	33			
CloserTeacher_Pre	Between Groups	,248	1	,248	,349	,559
	Within Groups	22,723	32	,710		
	Total	22,971	33			
ContentCoherence_Pre	Between Groups	,384	1	,384	,562	,459
	Within Groups	21,881	32	,684		
	Total	22,265	33			
Camaraderie_Pre	Between Groups	,112	1	,112	,104	,749
	Within Groups	34,505	32	1,078		
	Total	34,618	33			
EnjoyLectures_Pre	Between Groups	,912	1	,912	1,185	,284
	Within Groups	24,618	32	,769		
	Total	25,529	33			
Gettoknow_Post	Between Groups	8,033	1	8,033	5,117	,031
	Within Groups	50,232	32	1,570		
	Total	58,265	33			
CloserTeacher_Post	Between Groups	10,046	1	10,046	9,402	,004
	Within Groups	34,189	32	1,068		
	Total	44,235	33			
ContentCoherence_Post	Between Groups	,694	1	,694	,911	,347
	Within Groups	24,365	32	,761		
	Total	25,059	33			
Camaraderie_Post	Between Groups	13,300	1	13,300	9,319	,005
	Within Groups	45,670	32	1,427		
	Total	58,971	33			
EnjoyLectures_Post	Between Groups	7,861	1	7,861	8,978	,005
	Within Groups	28,021	32	,876		
	Total	35,882	33			
Gettoknow_Difference	Between Groups	16,677	1	16,677	15,009	,000
	Within Groups	35,558	32	1,111		
	Total	52,235	33			
CloserTeacher_Difference	Between Groups	13,449	1	13,449	18,766	,000
	Within Groups	22,933	32	,717		
	Total	36,382	33			
ContentCoherence_Difference	Between Groups	2,110	1	2,110	2,239	,144
	Within Groups	30,154	32	,942		
	Total	32,265	33			
Camaraderie_Difference	Between Groups	15,858	1	15,858	12,008	,002
	Within Groups	42,260	32	1,321		
	Total	58,118	33			
EnjoyLectures_Difference	Between Groups	14,128	1	14,128	15,194	,000
	Within Groups	29,754	32	,930		
	Total	43,882	33			

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Gettoknow_Pre	,204	34	,001	,886	34	,002
CloserTeacher_Pre	,279	34	,000	,842	34	,000
ContentCoherence_Pre	,282	34	,000	,795	34	,000
Camaraderie_Pre	,264	34	,000	,831	34	,000
EnjoyLectures_Pre	,230	34	,000	,865	34	,001
Gettoknow_Post	,210	34	,001	,894	34	,003
CloserTeacher_Post	,312	34	,000	,846	34	,000
ContentCoherence_Post	,221	34	,000	,885	34	,002
Camaraderie_Post	,207	34	,001	,895	34	,003
EnjoyLectures_Post	,199	34	,002	,908	34	,007
Gettoknow_Difference	,209	34	,001	,930	34	,032
CloserTeacher_Difference	,203	34	,001	,924	34	,021
ContentCoherence_Difference	,247	34	,000	,873	34	,001
Camaraderie_Difference	,159	34	,029	,938	34	,053
EnjoyLectures_Difference	,186	34	,004	,914	34	,011

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Gettoknow_Pre	,092	1	32	,764
CloserTeacher_Pre	,054	1	32	,818
ContentCoherence_Pre	,004	1	32	,952
Camaraderie_Pre	,745	1	32	,394
EnjoyLectures_Pre	2,899	1	32	,098
Gettoknow_Post	,679	1	32	,416
CloserTeacher_Post	13,305	1	32	,001
ContentCoherence_Post	1,973	1	32	,170
Camaraderie_Post	,061	1	32	,806
EnjoyLectures_Post	,112	1	32	,740
Gettoknow_Difference	3,771	1	32	,061
CloserTeacher_Difference	1,017	1	32	,321
ContentCoherence_Difference	10,131	1	32	,003
Camaraderie_Difference	,814	1	32	,374
EnjoyLectures_Difference	,775	1	32	,385

Robust Tests of Equality of Means

		Statistic ^a	df1	df2	Sig.
Gettoknow_Pre	Welch	1,105	1	29,675	,302
	Brown-Forsythe	1,105	1	29,675	,302
CloserTeacher_Pre	Welch	,342	1	28,842	,563
	Brown-Forsythe	,342	1	28,842	,563
ContentCoherence_Pre	Welch	,570	1	30,945	,456
	Brown-Forsythe	,570	1	30,945	,456
Camaraderie_Pre	Welch	,102	1	29,036	,751
	Brown-Forsythe	,102	1	29,036	,751
EnjoyLectures_Pre	Welch	1,231	1	31,753	,276
	Brown-Forsythe	1,231	1	31,753	,276
Gettoknow_Post	Welch	4,942	1	27,865	,035
	Brown-Forsythe	4,942	1	27,865	,035
CloserTeacher_Post	Welch	8,071	1	19,046	,010
	Brown-Forsythe	8,071	1	19,046	,010
ContentCoherence_Post	Welch	,827	1	22,992	,373
	Brown-Forsythe	,827	1	22,992	,373
Camaraderie_Post	Welch	9,031	1	28,127	,006
	Brown-Forsythe	9,031	1	28,127	,006
EnjoyLectures_Post	Welch	8,771	1	28,702	,006
	Brown-Forsythe	8,771	1	28,702	,006
Gettoknow_Difference	Welch	16,662	1	30,689	,000
	Brown-Forsythe	16,662	1	30,689	,000
CloserTeacher_Difference	Welch	18,410	1	28,989	,000
	Brown-Forsythe	18,410	1	28,989	,000
ContentCoherence_Difference	Welch	2,023	1	22,695	,169
	Brown-Forsythe	2,023	1	22,695	,169
Camaraderie_Difference	Welch	11,570	1	27,701	,002
	Brown-Forsythe	11,570	1	27,701	,002
EnjoyLectures_Difference	Welch	14,633	1	27,663	,001
	Brown-Forsythe	14,633	1	27,663	,001

a. Asymptotically F distributed.

Appendix G Tests of Hypotheses 1 and 2

ANOVA 1 – Drop Out

Descriptive Statistics

	DropoutConsidered	Mean	Std. Deviation	N
SatisfactionMaster	No	3,39990	,570456	102
	Yes	3,14604	,613190	96
	Total	3,27630	,603500	198
InstitutionalCommitment	No	3,90191	,641541	102
	Yes	3,31668	1,074762	96
	Total	3,61816	,924133	198
GoalCommitment	No	4,47791	,609941	102
	Yes	4,26360	,708332	96
	Total	4,37400	,666497	198
REMRegret	No	2,14581	,489644	102
	Yes	2,37399	,764395	96
	Total	2,25644	,645954	198
REMSelfRecrimination	No	1,54688	,635438	102
	Yes	1,99739	,932530	96
	Total	1,76521	,822999	198

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	,995	7503,912 ^b	5,000	192,000	,000	,995
	Wilks' Lambda	,005	7503,912 ^b	5,000	192,000	,000	,995
	Hotelling's Trace	195,414	7503,912 ^b	5,000	192,000	,000	,995
	Roy's Largest Root	195,414	7503,912 ^b	5,000	192,000	,000	,995
	DropoutConsidered	Pillai's Trace	,115	5,009 ^b	5,000	192,000	,000
	Wilks' Lambda	,885	5,009 ^b	5,000	192,000	,000	,115
	Hotelling's Trace	,130	5,009 ^b	5,000	192,000	,000	,115
	Roy's Largest Root	,130	5,009 ^b	5,000	192,000	,000	,115

- a. Design: Intercept + DropoutConsidered
b. Exact statistic

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
SatisfactionMaster	2,525	1	196	,114
InstitutionalCommitment	29,748	1	196	,000
GoalCommitment	,559	1	196	,455
REMRegret	13,081	1	196	,000
REMSelfRecrimination	15,441	1	196	,000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept + DropoutConsidered

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	SatisfactionMaster	3,162 ^a	1	3,162	9,036	,003	,044
	InstitutionalCommitment	16,937 ^b	1	16,937	21,941	,000	,101
	GoalCommitment	2,271 ^c	1	2,271	5,223	,023	,026
	REMRegret	2,575 ^d	1	2,575	6,338	,013	,031
Intercept	SatisfactionMaster	2118,448	1	2118,448	6053,801	,000	,969
	InstitutionalCommitment	2576,979	1	2576,979	3338,213	,000	,945
	GoalCommitment	3779,013	1	3779,013	8689,469	,000	,978
	REMRegret	1010,285	1	1010,285	2486,869	,000	,927
DropoutConsidered	SatisfactionMaster	3,162	1	3,162	9,036	,003	,044
	InstitutionalCommitment	16,937	1	16,937	21,941	,000	,101
	GoalCommitment	2,271	1	2,271	5,223	,023	,026
	REMRegret	2,575	1	2,575	6,338	,013	,031
Error	SatisfactionMaster	68,588	196	,350			
	InstitutionalCommitment	151,305	196	,772			
	GoalCommitment	85,240	196	,435			
	REMRegret	79,625	196	,406			
Total	SatisfactionMaster	2197,113	198				
	InstitutionalCommitment	2760,279	198				
	GoalCommitment	3875,619	198				
	REMRegret	1090,321	198				
Corrected Total	SatisfactionMaster	71,750	197				
	InstitutionalCommitment	168,242	197				
	GoalCommitment	87,511	197				
	REMRegret	82,199	197				

- a. R Squared = ,044 (Adjusted R Squared = ,039)
b. R Squared = ,101 (Adjusted R Squared = ,096)
c. R Squared = ,026 (Adjusted R Squared = ,021)
d. R Squared = ,031 (Adjusted R Squared = ,026)

Between-Subjects Factors

	Value Label	N	
DropoutConsidered	1	No	102
	2	Yes	96

Box's Test of Equality of Covariance Matrices^a

Box's M	55,560
F	3,603
df1	15
df2	153441,961
Sig.	,000

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

- a. Design: Intercept + DropoutConsidered

ANOVA 2 – Expectations Met

Descriptive Statistics

	ExpectationsMet	Mean	Std. Deviation	N
SatisfactionMaster	No	3,11355	,585813	90
	Yes	3,39844	,580435	114
	Total	3,27275	,598416	204
InstitutionalCommitment	No	3,16106	,971860	90
	Yes	4,00845	,717300	114
	Total	3,63460	,937268	204
GoalCommitment	No	4,27606	,675159	90
	Yes	4,48185	,678029	114
	Total	4,39106	,682824	204
REMRegret	No	2,45444	,776630	90
	Yes	2,10360	,533970	114
	Total	2,25864	,673477	204

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	,994	8120,623 ^b	4,000	199,000	,000	,994
	Wilks' Lambda	,006	8120,623 ^b	4,000	199,000	,000	,994
	Hotelling's Trace	163,229	8120,623 ^b	4,000	199,000	,000	,994
	Roy's Largest Root	163,229	8120,623 ^b	4,000	199,000	,000	,994
	ExpectationsMet	Pillai's Trace	,211	13,312 ^b	4,000	199,000	,000
ExpectationsMet	Wilks' Lambda	,789	13,312 ^b	4,000	199,000	,000	,211
	Hotelling's Trace	,268	13,312 ^b	4,000	199,000	,000	,211
	Roy's Largest Root	,268	13,312 ^b	4,000	199,000	,000	,211

a. Design: Intercept + ExpectationsMet
b. Exact statistic

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
SatisfactionMaster	,272	1	202	,603
InstitutionalCommitment	12,751	1	202	,000
GoalCommitment	,067	1	202	,796
REMRegret	16,551	1	202	,000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + ExpectationsMet

Between-Subjects Factors

	Value Label	N
ExpectationsMet	1	90
	2	114

Box's Test of Equality of Covariance Matrices^a

Box's M	34,923
F	3,416
df1	10
df2	172530,730
Sig.	,000

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + ExpectationsMet

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	SatisfactionMaster	4,082 ^a	1	4,082	12,017	,001	,056
	InstitutionalCommitment	36,115 ^b	1	36,115	51,296	,000	,203
	GoalCommitment	2,130 ^c	1	2,130	4,650	,032	,023
	REMRegret	6,187 ^d	1	6,187	14,552	,000	,067
Intercept	SatisfactionMaster	2132,772	1	2132,772	6278,990	,000	,969
	InstitutionalCommitment	2585,209	1	2585,209	3671,988	,000	,948
	GoalCommitment	3857,603	1	3857,603	8422,489	,000	,977
	REMRegret	1045,128	1	1045,128	2458,046	,000	,924
ExpectationsMet	SatisfactionMaster	4,082	1	4,082	12,017	,001	,056
	InstitutionalCommitment	36,115	1	36,115	51,296	,000	,203
	GoalCommitment	2,130	1	2,130	4,650	,032	,023
	REMRegret	6,187	1	6,187	14,552	,000	,067
Error	SatisfactionMaster	68,613	202	,340			
	InstitutionalCommitment	142,215	202	,704			
	GoalCommitment	92,518	202	,458			
	REMRegret	85,888	202	,425			
Total	SatisfactionMaster	2257,720	204				
	InstitutionalCommitment	2873,234	204				
	GoalCommitment	4028,051	204				
	REMRegret	1132,771	204				
Corrected Total	SatisfactionMaster	72,695	203				
	InstitutionalCommitment	178,330	203				
	GoalCommitment	94,648	203				
	REMRegret	92,075	203				

a. R Squared = ,056 (Adjusted R Squared = ,051)
b. R Squared = ,203 (Adjusted R Squared = ,199)
c. R Squared = ,023 (Adjusted R Squared = ,018)
d. R Squared = ,067 (Adjusted R Squared = ,063)

Appendix H Tests of Hypothesis 3

Correlation Analysis

Correlations

		Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness to experience	PFC	CSI
Extraversion	Pearson Correlation	1	,189	,066	,117	,164	,016	,134
	Sig. (2-tailed)		,256	,694	,483	,326	,931	,451
	N	38	38	38	38	38	32	34
Agreeableness	Pearson Correlation	,189	1	,132	,130	-,162	,079	,095
	Sig. (2-tailed)	,256		,430	,438	,330	,666	,592
	N	38	38	38	38	38	32	34
Conscientiousness	Pearson Correlation	,066	,132	1	-,024	-,210	,042	-,172
	Sig. (2-tailed)	,694	,430		,887	,108	,821	,331
	N	38	38	38	38	38	32	34
Emotional Stability	Pearson Correlation	,117	,130	-,024	1	-,216	-,208	,037
	Sig. (2-tailed)	,483	,438	,887		,193	,254	,835
	N	38	38	38	38	38	32	34
Openness to experience	Pearson Correlation	,164	-,162	-,210	-,216	1	-,261	-,142
	Sig. (2-tailed)	,326	,330	,188	,193		,166	,424
	N	38	38	38	38	38	32	34
PFC	Pearson Correlation	,016	,079	,042	-,208	-,251	1	,301
	Sig. (2-tailed)	,931	,666	,821	,254	,166		,089
	N	32	32	32	32	32	35	33
CSI	Pearson Correlation	,134	,095	-,172	,037	-,142	,301	1
	Sig. (2-tailed)	,451	,592	,331	,835	,424	,089	
	N	34	34	34	34	34	33	37

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Extraversion	,126	30	,200 [*]	,951	30	,175
Agreeableness	,200	30	,003	,899	30	,008
Conscientiousness	,181	30	,013	,904	30	,011
Emotional Stability	,195	30	,005	,948	30	,150
Openness to experience	,177	30	,017	,941	30	,097
PFC	,129	30	,200 [*]	,962	30	,341
CSI	,093	30	,200 [*]	,961	30	,324

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

ANOVA – LockedIn, ExpectationsMet, ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: Extraversion

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13,708 ^a	5	2,750	1,972	,119	,291
Intercept	359,661	1	359,661	257,252	,000	,915
LockedIn	5,868	1	5,868	4,197	,052	,149
ExpectationsMet	7,635	1	7,635	5,461	,028	,185
ConsideredDropOut	4,101	1	4,101	2,933	,100	,109
LockedIn * ExpectationsMet	,401	1	,401	,287	,597	,012
LockedIn * ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet * ConsideredDropOut	,215	1	,215	,154	,698	,006
LockedIn * ExpectationsMet * ConsideredDropOut	,000	0	.	.	.	,000
Error	33,554	24	1,398			
Total	476,750	30				
Corrected Total	47,342	29				

a. R Squared = ,291 (Adjusted R Squared = ,144)

Levene's Test of Equality of Error Variances^a

Dependent Variable: Extraversion

F	df1	df2	Sig.
2,218	5	24	,086

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept * LockedIn * ExpectationsMet * ConsideredDropOut * LockedIn * ExpectationsMet * LockedIn * ConsideredDropOut * ExpectationsMet * ConsideredDropOut * LockedIn * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: Agreeableness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6,183 ^a	5	1,237	1,142	,366	,192
Intercept	417,992	1	417,992	385,962	,000	,941
Lockedin	1,009	1	1,009	1,005	,326	,040
ExpectationsMet	2,329	1	2,329	2,151	,156	,082
ConsideredDropOut	2,593	1	2,593	2,394	,135	,091
Lockedin * ExpectationsMet	,022	1	,022	,021	,887	,001
Lockedin * ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet * ConsideredDropOut	1,260	1	1,260	1,163	,292	,046
Lockedin * ExpectationsMet * ConsideredDropOut	,000	0	.	.	.	,000
Error	25,992	24	1,083			
Total	524,250	30				
Corrected Total	32,175	29				

a. R Squared = ,192 (Adjusted R Squared = ,024)

Levene's Test of Equality of Error Variances^a

Source	F	df1	df2	Sig.
Lockedin	574	5	24	,719

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: Conscientiousness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7,042 ^a	5	1,408	1,324	,288	,216
Intercept	677,554	1	677,554	636,865	,000	,964
Lockedin	2,222	1	2,222	2,009	,161	,090
ExpectationsMet	3,785	1	3,785	3,568	,071	,129
ConsideredDropOut	2,752	1	2,752	2,587	,121	,097
Lockedin * ExpectationsMet	,089	1	,089	,084	,775	,003
Lockedin * ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet * ConsideredDropOut	,771	1	,771	,725	,403	,029
Lockedin * ExpectationsMet * ConsideredDropOut	,000	0	.	.	.	,000
Error	25,533	24	1,064			
Total	828,250	30				
Corrected Total	32,575	29				

a. R Squared = ,216 (Adjusted R Squared = ,053)

Levene's Test of Equality of Error Variances^a

Source	F	df1	df2	Sig.
Lockedin	1,355	5	24	,278

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: Emotional Stability

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12,938 ^a	5	2,588	1,812	,148	,274
Intercept	542,120	1	542,120	379,741	,000	,941
Lockedin	4,513	1	4,513	3,161	,088	,116
ExpectationsMet	,768	1	,768	,538	,470	,022
ConsideredDropOut	5,148	1	5,148	3,606	,070	,131
Lockedin * ExpectationsMet	2,568	1	2,568	1,799	,192	,070
Lockedin * ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet * ConsideredDropOut	10,215	1	10,215	7,155	,013	,230
Lockedin * ExpectationsMet * ConsideredDropOut	,000	0	.	.	.	,000
Error	34,263	24	1,428			
Total	682,000	30				
Corrected Total	47,200	29				

a. R Squared = ,274 (Adjusted R Squared = ,123)

Levene's Test of Equality of Error Variances^a

Source	F	df1	df2	Sig.
Lockedin	1,761	5	24	,159

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: Openness to experience

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1,521 ^a	5	,304	,293	,912	,057
Intercept	650,543	1	650,543	625,877	,000	,963
Lockedin	,501	1	,501	,482	,494	,020
ExpectationsMet	,224	1	,224	,218	,646	,008
ConsideredDropOut	,172	1	,172	,168	,688	,007
Lockedin *						
ExpectationsMet	,868	1	,868	,835	,370	,034
Lockedin *						
ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet *						
ConsideredDropOut	,434	1	,434	,417	,524	,017
Lockedin *						
ExpectationsMet *	,000	0	.	.	.	,000
ConsideredDropOut						
Error	24,946	24	1,039			
Total	786,500	30				
Corrected Total	26,467	29				

a. R Squared = ,057 (Adjusted R Squared = -,139)

Levene's Test of Equality of Error Variances^a

Dependent Variable: Openness to experience

F	df1	df2	Sig.
1,043	5	24	,432

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: PFC

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	,712 ^a	5	,142	,565	,728	,102
Intercept	255,761	1	255,761	1015,062	,000	,976
Lockedin	,108	1	,108	,430	,518	,017
ExpectationsMet	,026	1	,026	,103	,751	,004
ConsideredDropOut	,240	1	,240	,985	,330	,030
Lockedin *						
ExpectationsMet	,159	1	,159	,631	,434	,025
Lockedin *						
ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet *						
ConsideredDropOut	,005	1	,005	,022	,884	,001
Lockedin *						
ExpectationsMet *	,000	0	.	.	.	,000
ConsideredDropOut						
Error	6,299	25	,252			
Total	333,215	31				
Corrected Total	7,011	30				

a. R Squared = ,102 (Adjusted R Squared = -,078)

Levene's Test of Equality of Error Variances^a

Dependent Variable: PFC

F	df1	df2	Sig.
2,830	5	25	,032

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Tests of Between-Subjects Effects

Dependent Variable: CSI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	376,577 ^a	5	75,395	,316	,898	,082
Intercept	34299,223	1	34299,223	143,769	,000	,857
Lockedin	60,980	1	60,980	,256	,618	,011
ExpectationsMet	154,466	1	154,466	,647	,429	,026
ConsideredDropOut	231,449	1	231,449	,970	,334	,039
Lockedin *						
ExpectationsMet	,593	1	,593	,002	,961	,000
Lockedin *						
ConsideredDropOut	,000	0	.	.	.	,000
ExpectationsMet *						
ConsideredDropOut	,123	1	,123	,001	,982	,000
Lockedin *						
ExpectationsMet *	,000	0	.	.	.	,000
ConsideredDropOut						
Error	5725,723	24	238,572			
Total	51499,000	30				
Corrected Total	6102,700	29				

a. R Squared = ,062 (Adjusted R Squared = -,134)

Levene's Test of Equality of Error Variances^a

Dependent Variable: CSI

F	df1	df2	Sig.
2,677	5	24	,046

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

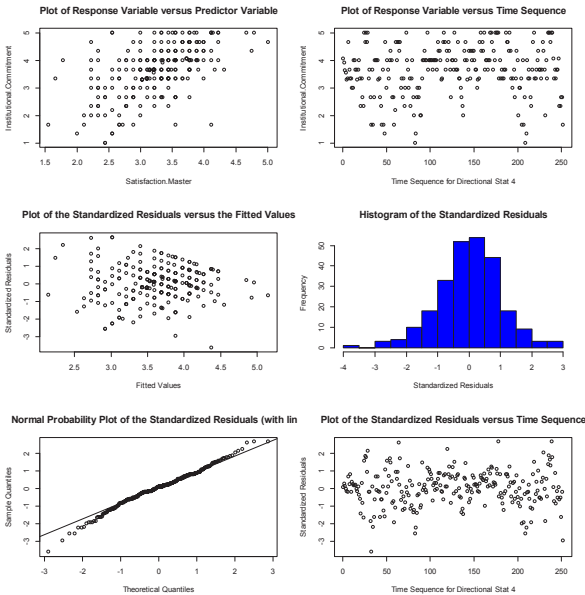
a. Design: Intercept + Lockedin + ExpectationsMet + ConsideredDropOut + Lockedin * ExpectationsMet + Lockedin * ConsideredDropOut + ExpectationsMet * ConsideredDropOut + Lockedin * ExpectationsMet * ConsideredDropOut

Correlations

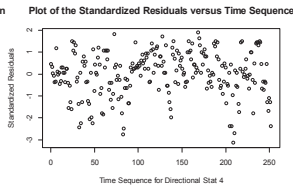
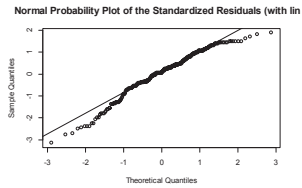
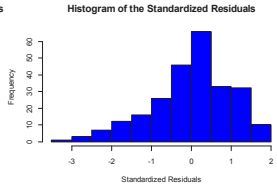
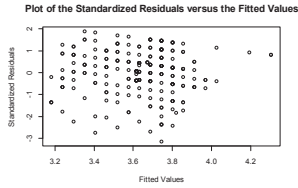
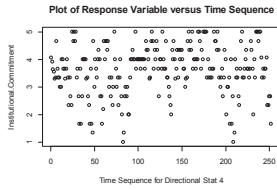
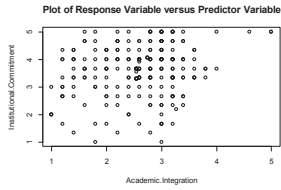
		SatisfactionMaster	InstitutionalCommitment	GoalCommitment	SocialIntegration	AcademicIntegration	REMRegret	REMSelfRecreation
SatisfactionMaster	Pearson Correlation	1	,552**	,312**	,065	,333**	-,544**	-,420**
	Sig. (2-tailed)		,000	,000	,313	,000	,000	,000
	N	246	246	246	246	246	246	246
InstitutionalCommitment	Pearson Correlation	,552**	1	,306**	,187**	,221**	-,708**	-,524**
	Sig. (2-tailed)	,000		,000	,003	,000	,000	,000
	N	246	246	246	246	246	246	246
GoalCommitment	Pearson Correlation	,312**	,306**	1	,183**	,061	-,321**	-,198**
	Sig. (2-tailed)	,000	,000		,004	,344	,000	,002
	N	246	246	246	246	246	246	246
SocialIntegration	Pearson Correlation	,065	,187**	,183**	1	,195	-,030	,010
	Sig. (2-tailed)	,313	,003	,004		,002	,636	,879
	N	246	246	246	246	246	246	246
AcademicIntegration	Pearson Correlation	,333**	,221**	,061	,195**	1	-,279**	-,057
	Sig. (2-tailed)	,000	,000	,344	,002		,000	,371
	N	246	246	246	246	246	246	246
REMRegret	Pearson Correlation	-,544**	-,708**	-,321**	-,030	-,279**	1	,485
	Sig. (2-tailed)	,000	,000	,000	,636	,000		,000
	N	246	246	246	246	246	246	246
REMSelfRecreation	Pearson Correlation	-,420**	-,524**	-,198**	,010	-,057	,485**	1
	Sig. (2-tailed)	,000	,000	,002	,879	,371	,000	
	N	246	246	246	246	246	246	246

** . Correlation is significant at the 0.01 level (2-tailed).

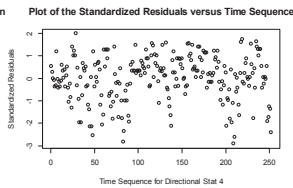
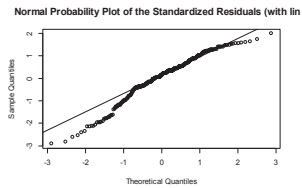
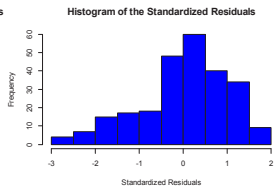
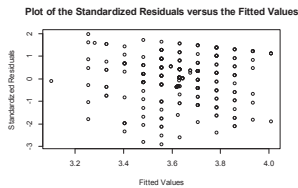
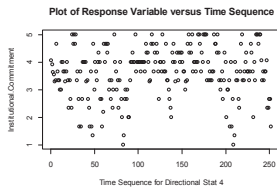
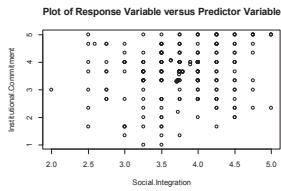
Regression of Institutional Commitment~Satisfaction Master



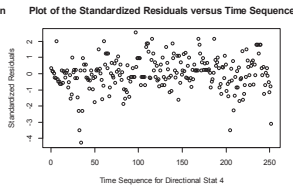
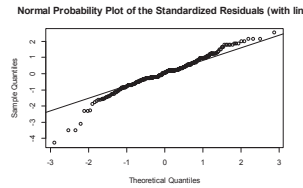
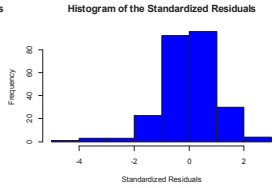
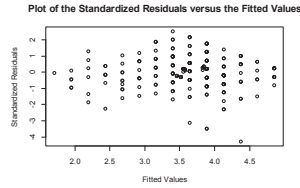
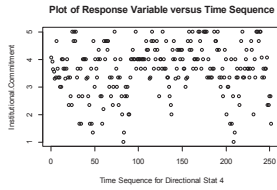
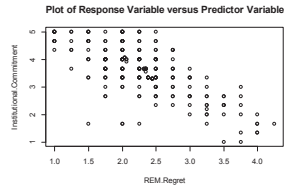
Regression of Institutional Commitment~Academic Integration



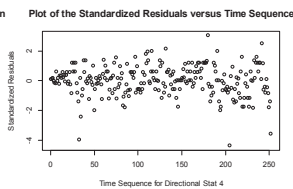
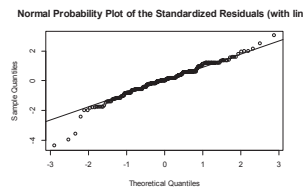
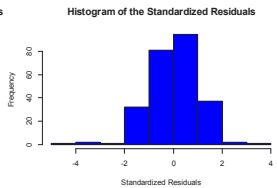
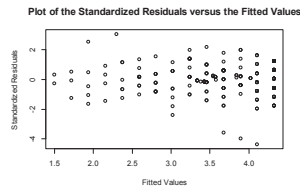
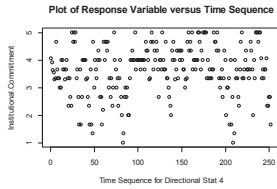
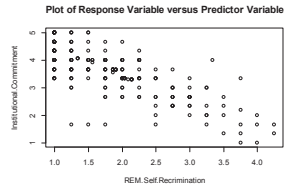
Regression of Institutional Commitment~Social Integration



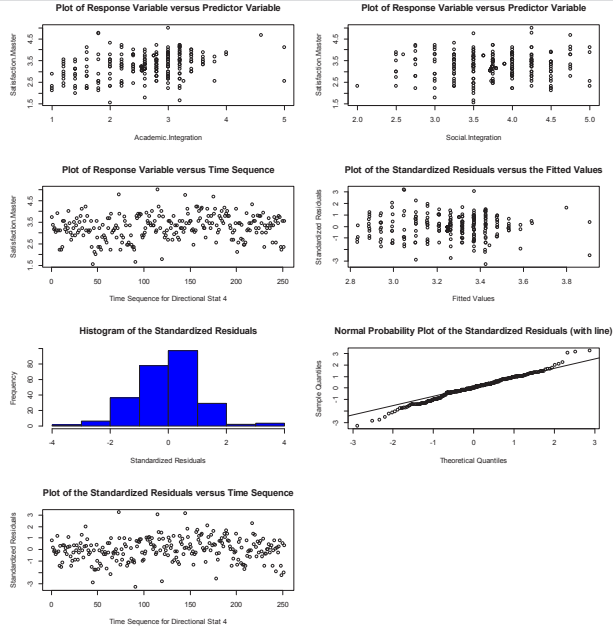
Regression of Institutional Commitment~Regret



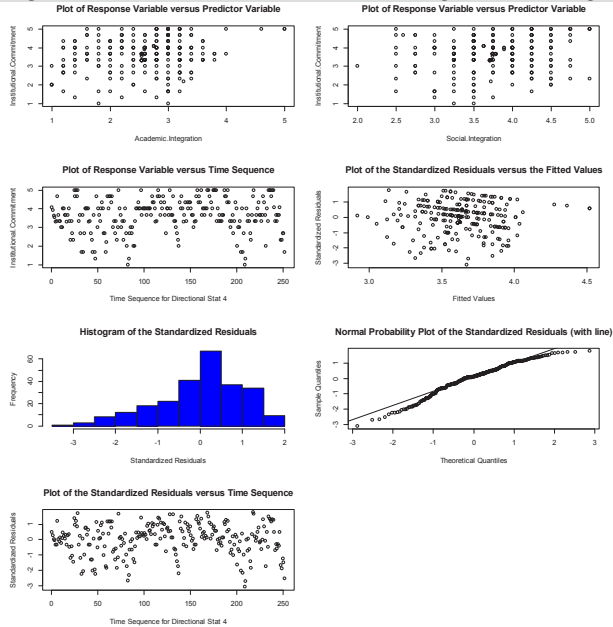
Regression of Institutional Commitment~Self Recrimination



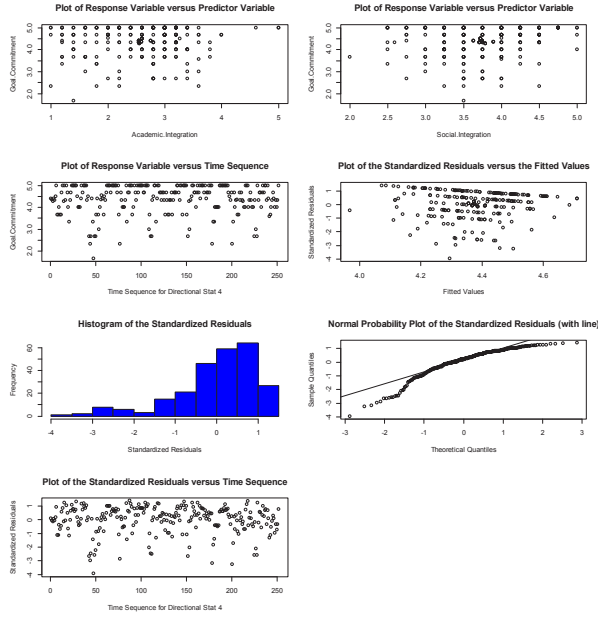
Regression of Master Satisfaction~Academic Integration+ Social Integration



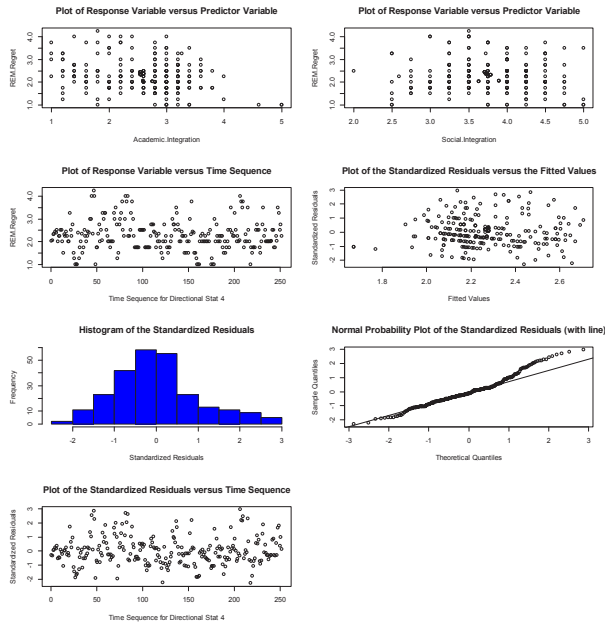
Regression of Institutional Commitment~Academic Integration+Social Integration



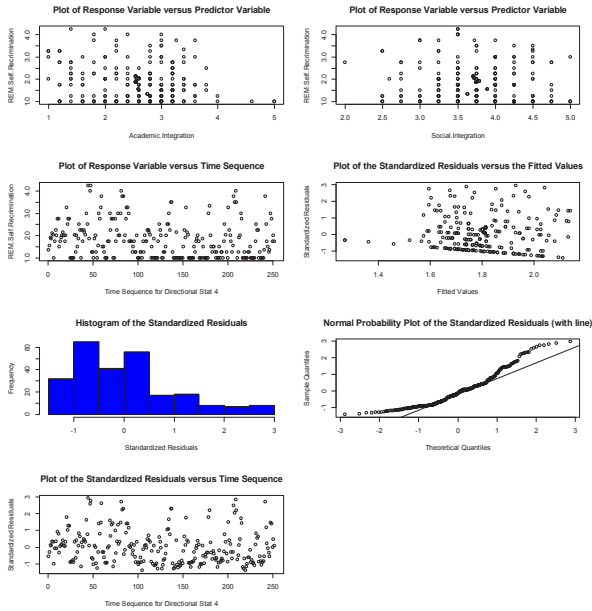
Regression of Goal Commitment ~ Academic Integration + Social Integration



Regression of Regret ~ Academic Integration + Social Integration

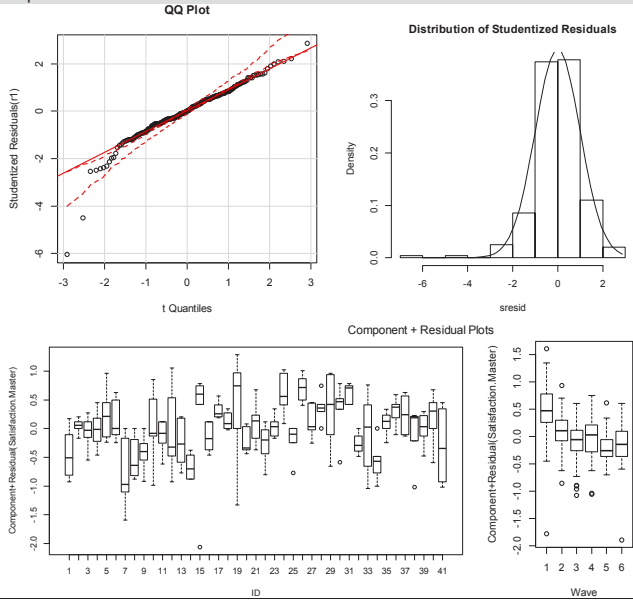


Regression of Self Recrimination ~ Academic Integration + Social Integration

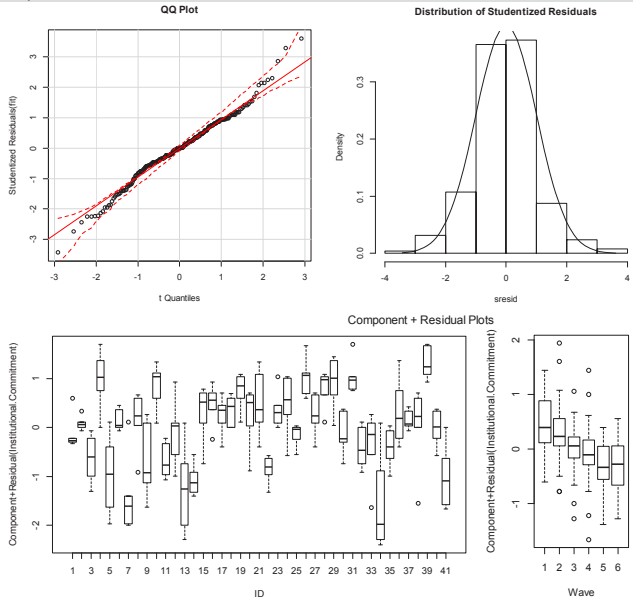


Appendix K Graphical Outputs for Fixed Effects Regressions

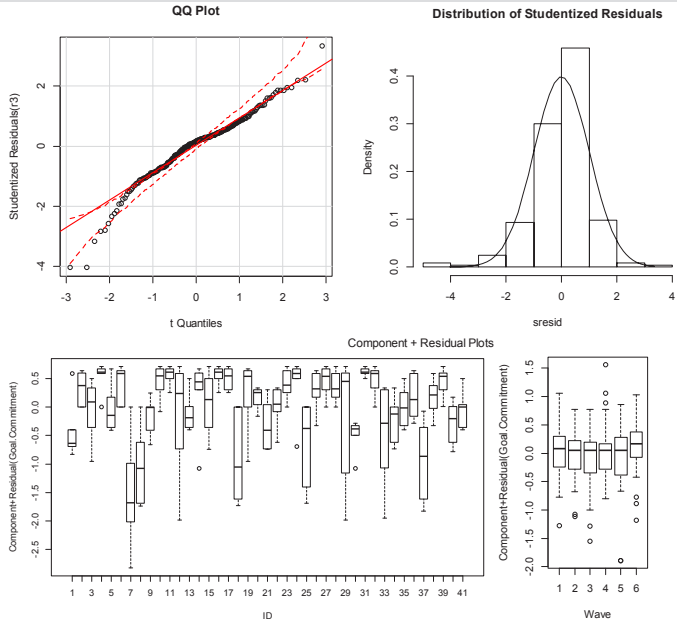
Dependent Variable: Master Satisfaction



Dependent Variable: Institutional Commitment

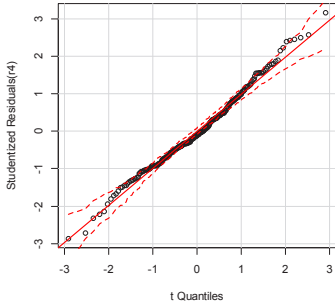


Dependent Variable: Goal Commitment

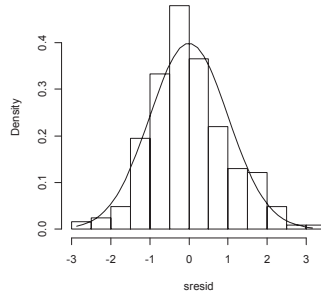


Dependent Variable: REM Regret

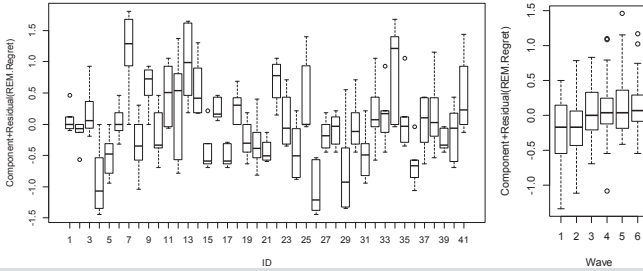
QQ Plot



Distribution of Studentized Residuals

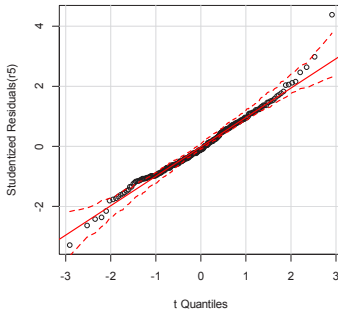


Component + Residual Plots

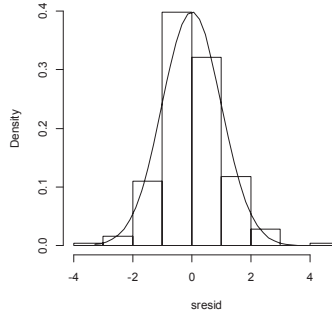


Dependent Variable: REM Self Recrimination

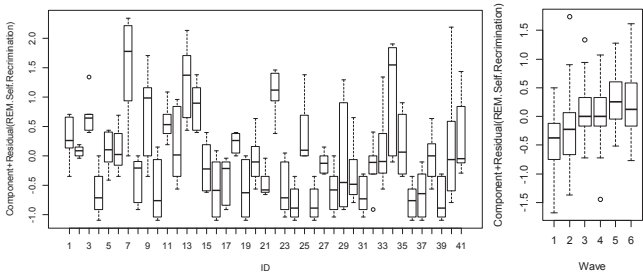
QQ Plot



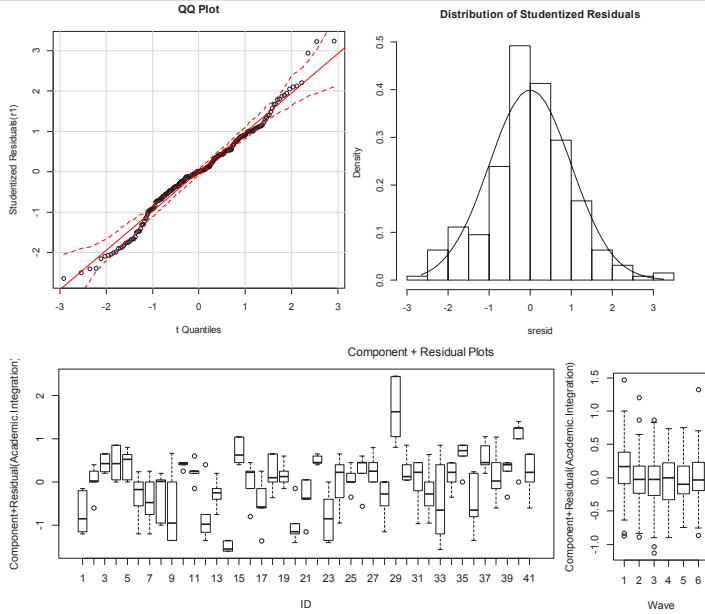
Distribution of Studentized Residuals



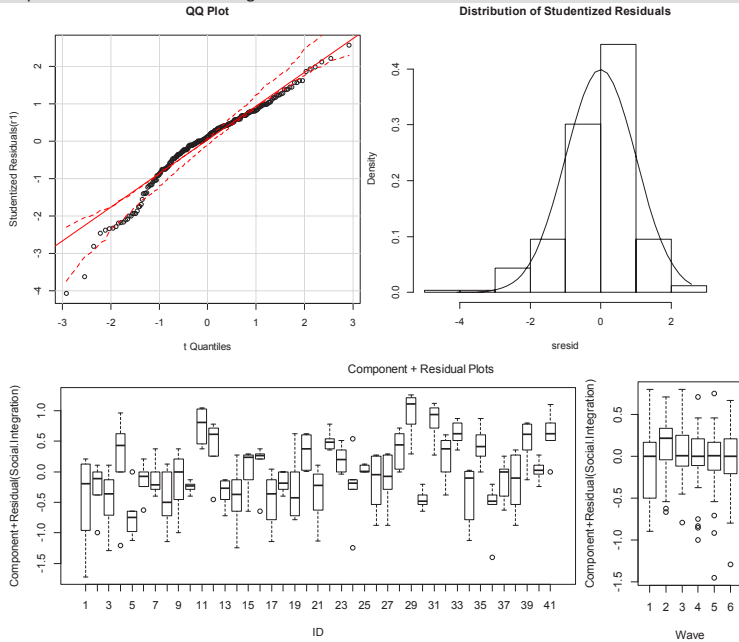
Component + Residual Plots



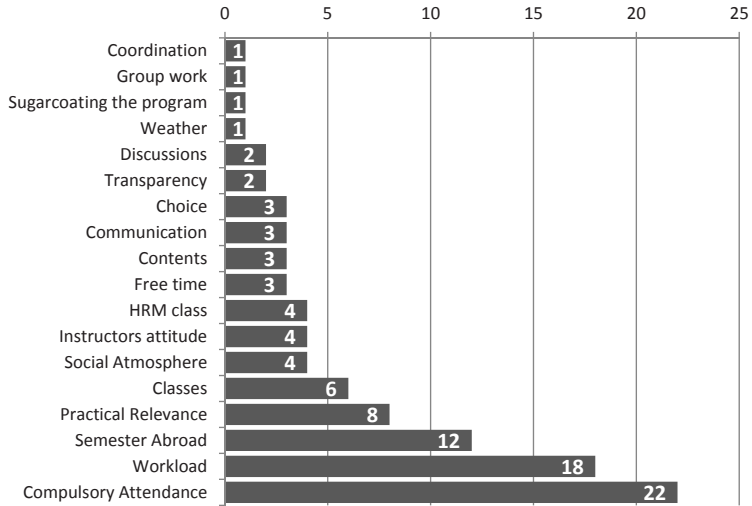
Dependent Variable: Academic Integration



Dependent Variable: Social Integration



Appendix L Detailed Results for Word Cloud regarding Reasons for Dissatisfaction among Students in the Master's Program, in absolute Numbers.



Appendix M Individual Result Summary

Range of Satisfaction with Bachelor's program and scales inquired over 6 Waves 1 to 5

Number of Applications for Bachelor's and Master's Programs are given in absolute Numbers

Thought about dropping out in Bachelor' program?

1 No 2 Yes, but didn't apply 3 Yes, and sent out Applications 4 Yes, and switched

Origin

Where did you receive your *Abitur* (high school diploma)?

1 Berlin area 2 Brandenburg area 3 Other areas (in Germany) 4 Outside Germany

Where did you receive your Bachelor's degree?

1 At the same location 2 In another place, in Berlin 3 In another area 4 In another location outside Germany

Key for calculation of individual investment is shown in scale description in Appendix B.

Characteristics

Range of Susceptibility for Social Influence 12 to 84

Range of Preference for Consistency (PFC) 1 to 5

Range of Personality Items 1 to 7

Range of Expectation and Expectation Evaluation Scales 1 to 5

Thought about dropping out in Master's program? (Self-reported)

1 No 2 Yes, but didn't apply 3 Yes, and sent out Applications

Were Expectations Met? (Lower than Average Difference between Expectations and Expectation Evaluation)

1 No 2 Yes

Missing values are set to 0. The continuous measure result overviews include the imputed missing values. For identification of respondents with Waves missing see Table 24 on page 105.

ID: 0 Average

History: Bachelor Satisfaction 3.29
Thought about dropping out 1

Investment: Origin Abitur 2
Bachelor 2

Characteristics

Social Susceptibility 40.4 /84
Preference for Consistency 3.26
Extraversion 3.99
Agreeableness 4.09
Conscientiousness 5.21
Emotional Stability 4.63
Openness to Experiences 5.14

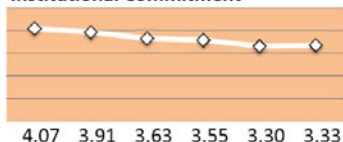
Personality

Number of Bachelor's Applications 5.769

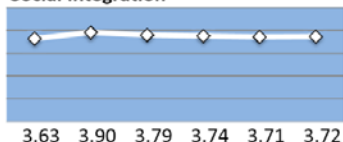
Alternatives

Number of Master's Applications 4.49
Number of Accepted Applications 2.85

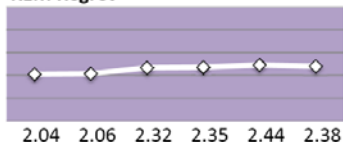
Institutional Commitment



Social Integration



REM Regret

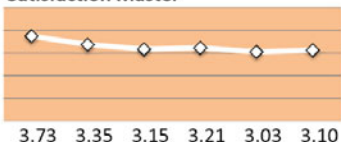


Expectations

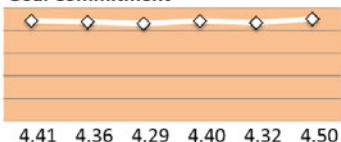
Get to know other students better 3.69
Be closer to Lecturers 4.05
Better understand contents 4.15
Better feeling of comradery 3.79
Like lectures better 3.95

Thought about dropping out in Master 1.571

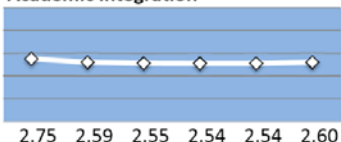
Satisfaction Master



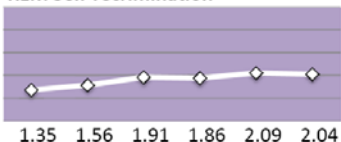
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 3.08
Felt closer to Lecturers 3.33
Understood contents better 3.33
Had better feeling of comradery 2.94
Liked lectures better 2.92

Expectations Met 0

ID: 1 Vera

History: Bachelor Satisfaction 3.11
Thought about dropping out 1

Number of Bachelor's Applications 6

Investment: Origin Abitur 3
Bachelor 3

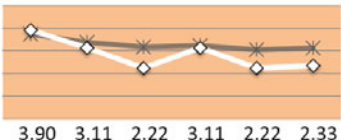
Alternatives
Number of Master's Applications 10
Number of Accepted Applications 6

Characteristics

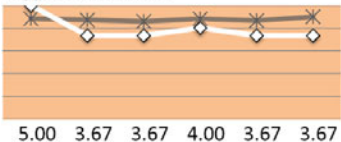
Social Susceptibility 25.0 /84
Preference for Consistency 3.94
Extraversion 4.5
Agreeableness 4.0
Conscientiousness 6.0
Emotional Stability 3.0
Openness to Experiences 4.5

Personality

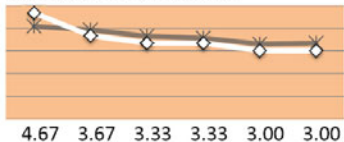
Satisfaction Master



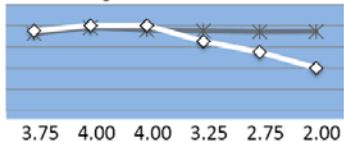
Goal Commitment



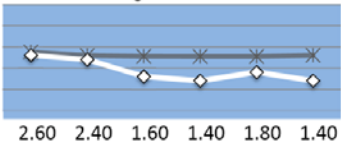
Institutional Commitment



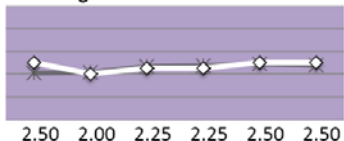
Social Integration



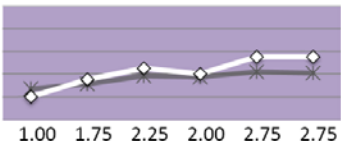
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 3
Like lectures better 5

Expectation Evaluation

Got to know other students better 1
Felt closer to Lecturers 1
Understood contents better 3
Had better feeling of comradery 1
Liked lectures better 2

Thought about dropping out in Master 2

Expectations Met 1

ID: 2 Mark

History: Bachelor Satisfaction 3.44
Thought about dropping out 1

Number of Bachelor's Applications 3

Investment: Origin Abitur 3
Bachelor 2

Alternatives

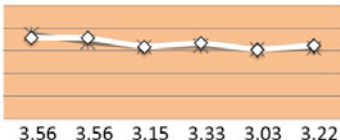
Number of Master's Applications 5
Number of Accepted Applications 4

Characteristics

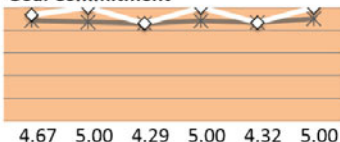
Social Susceptibility 0.0 /84
Preference for Consistency 0.00
Extraversion 4.5
Agreeableness 4.5
Conscientiousness 5.0
Emotional Stability 5.0
Openness to Experiences 6.5

Personality

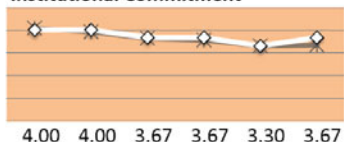
Satisfaction Master



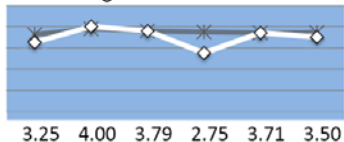
Goal Commitment



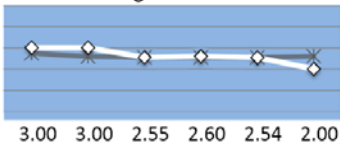
Institutional Commitment



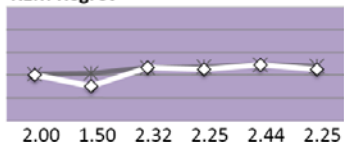
Social Integration



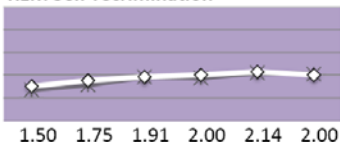
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 3
Better understand contents 4
Better feeling of comradery 3
Like lectures better 4

Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 1
Understood contents better 4
Had better feeling of comradery 3
Liked lectures better 3

Thought about dropping out in Master 1

Expectations Met 1

ID: 3 Anna

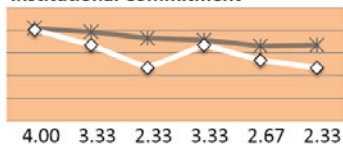
History: Bachelor Satisfaction 4.11
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

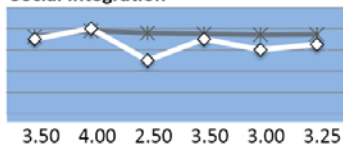
Characteristics

Social Susceptibility 36.0 /84
Preference for Consistency 2.89
Extraversion 5.0
Agreeableness 3.5
Conscientiousness 3.5
Emotional Stability 6.0
Openness to Experiences 6.0

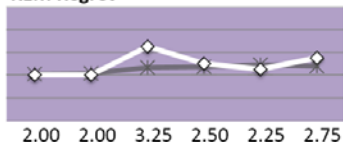
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 2
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 5
Like lectures better 4

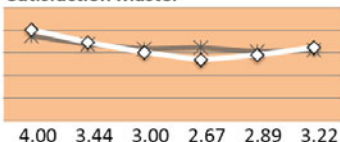
Thought about dropping out in Master 2

Number of Bachelor's Applications 5

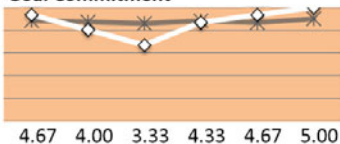
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 2

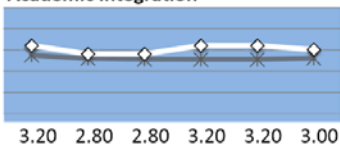
Satisfaction Master



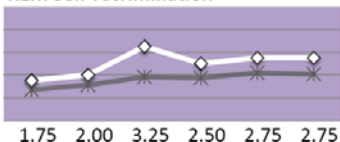
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 1
Felt closer to Lecturers 2
Understood contents better 4
Had better feeling of comradery 2
Liked lectures better 3

Expectations Met 1

ID: 4 Julia

History: Bachelor Satisfaction 3.11
Thought about dropping out 1

Number of Bachelor's Applications 5

Investment: Origin Abitur 3
Bachelor 4

Alternatives

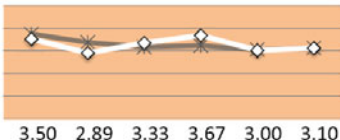
Number of Master's Applications 5
Number of Accepted Applications 2

Characteristics

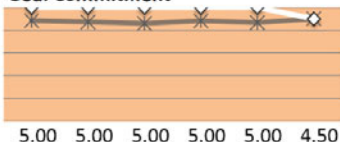
Social Susceptibility 24.0 /84
Preference for Consistency 0.00
Extraversion 5.5
Agreeableness 3.5
Conscientiousness 6.5
Emotional Stability 3.0
Openness to Experiences 6.0

Personality

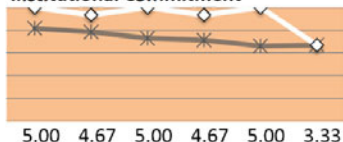
Satisfaction Master



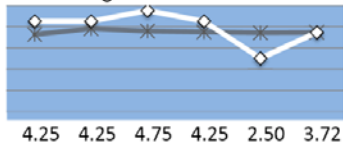
Goal Commitment



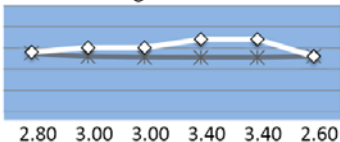
Institutional Commitment



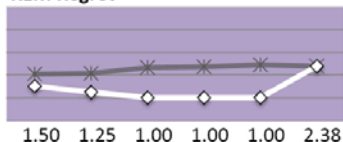
Social Integration



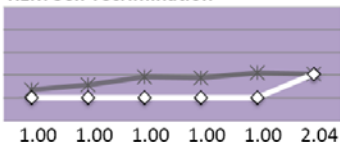
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradeship 4
Like lectures better 5

Expectation Evaluation

Got to know other students better 0
Felt closer to Lecturers 0
Understood contents better 0
Had better feeling of comradeship 0
Liked lectures better 0

Thought about dropping out in Master 0

Expectations Met 0

ID: 5 Eric

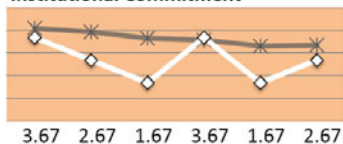
History: Bachelor Satisfaction 3.67
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

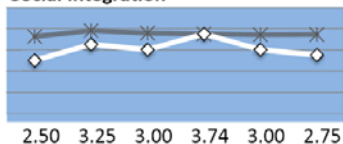
Characteristics

Social Susceptibility 22.0 /84
Preference for Consistency 2.89
Extraversion 2.5
Agreeableness 2.0
Conscientiousness 5.0
Emotional Stability 3.0
Openness to Experiences 6.0

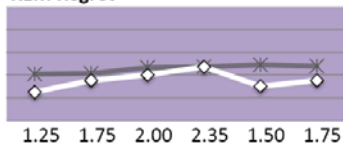
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 2
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 3
Like lectures better 4

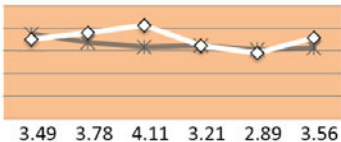
Thought about dropping out in Master 2

Number of Bachelor's Applications 10

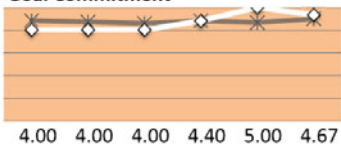
Alternatives

Number of Master's Applications 10
Number of Accepted Applications 6

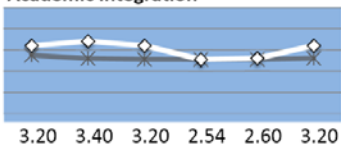
Satisfaction Master



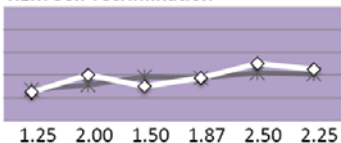
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 1
Felt closer to Lecturers 5
Understood contents better 4
Had better feeling of comradery 1
Liked lectures better 2

Expectations Met 1

ID: 6 Richard

History: Bachelor Satisfaction 3.78
Thought about dropping out 1

Number of Bachelor's Applications 3

Investment: Origin Abitur 3
Bachelor 2

Alternatives

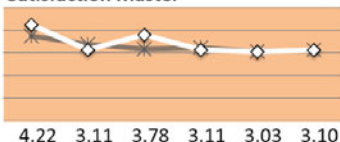
Number of Master's Applications 1
Number of Accepted Applications 1

Characteristics

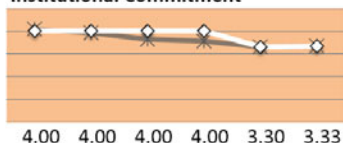
Social Susceptibility 39.0 /84
Preference for Consistency 0.00
Extraversion 2.5
Agreeableness 4.5
Conscientiousness 5.5
Emotional Stability 5.5
Openness to Experiences 5.5

Personality

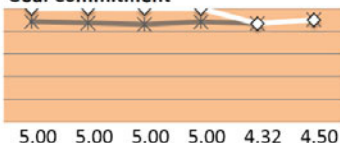
Satisfaction Master



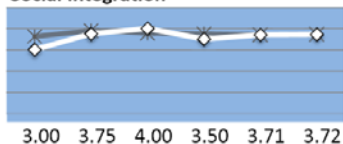
Institutional Commitment



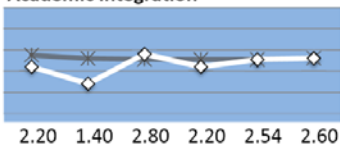
Goal Commitment



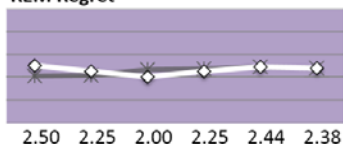
Social Integration



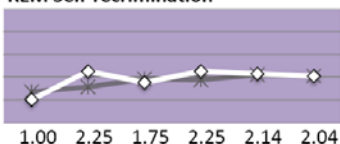
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 5
Like lectures better 5

Expectation Evaluation

Got to know other students better 0
Felt closer to Lecturers 0
Understood contents better 0
Had better feeling of comradery 0
Liked lectures better 0

Thought about dropping out in Master 0

Expectations Met 0

ID: 7 Stella

History: Bachelor Satisfaction 1.56
Thought about dropping out 3

Number of Bachelor's Applications 10

Investment: Origin Abitur 3
Bachelor 3

Alternatives

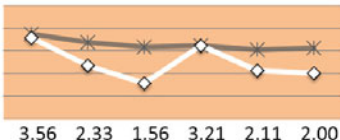
Number of Master's Applications 5
Number of Accepted Applications 1

Characteristics

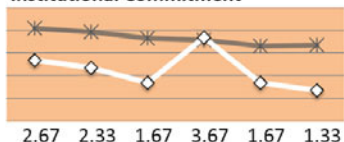
Social Susceptibility 19.0 /84
Preference for Consistency 3.78
Extraversion 3.0
Agreeableness 4.0
Conscientiousness 5.0
Emotional Stability 2.0
Openness to Experiences 5.5

Personality

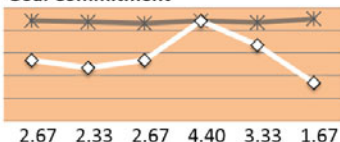
Satisfaction Master



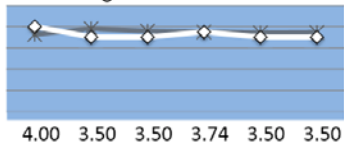
Institutional Commitment



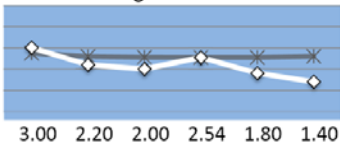
Goal Commitment



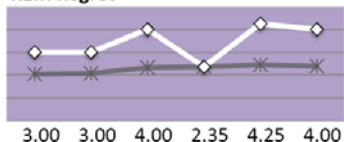
Social Integration



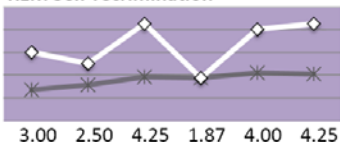
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 5
Like lectures better 4

Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 2
Understood contents better 2
Had better feeling of comradery 3
Liked lectures better 1

Thought about dropping out in Master 2

Expectations Met 1

ID: 8 Joanna

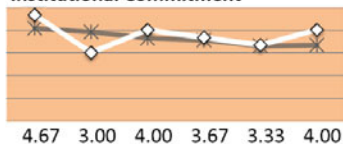
History: Bachelor Satisfaction 2.56
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 2

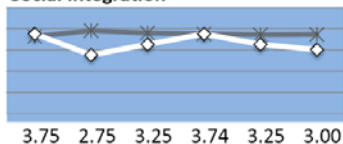
Characteristics

Social Susceptibility 51.0 /84
Preference for Consistency 3.78
Extraversion 5.5
Agreeableness 2.0
Conscientiousness 6.0
Emotional Stability 4.5
Openness to Experiences 5.5

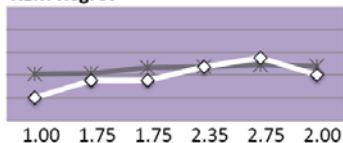
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 3
Like lectures better 4

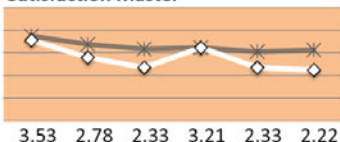
Thought about dropping out in Master 1

Number of Bachelor's Applications 4

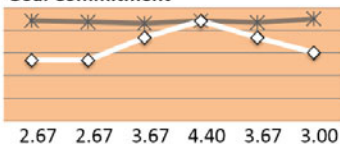
Alternatives

Number of Master's Applications 1
Number of Accepted Applications 1

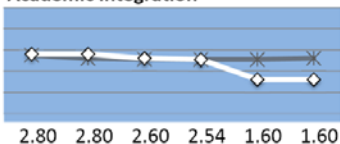
Satisfaction Master



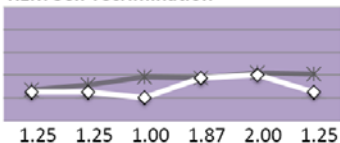
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 4
Liked lectures better 4

Expectations Met 2

ID: 9 Lena

History: Bachelor Satisfaction 3.56
Thought about dropping out 1

Investment: Origin Abitur 1
Bachelor -9

Characteristics

Social Susceptibility 65.0 /84
Preference for Consistency 2.89
Extraversion 0.0
Agreeableness 0.0
Conscientiousness 0.0
Emotional Stability 0.0
Openness to Experiences 0.0

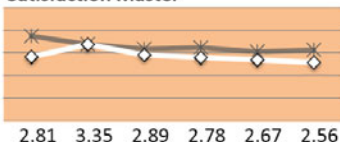
Personality

Number of Bachelor's Applications 2

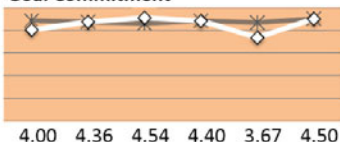
Alternatives

Number of Master's Applications 2
Number of Accepted Applications 2

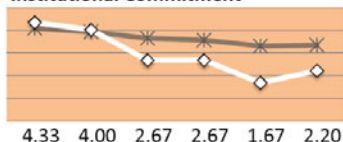
Satisfaction Master



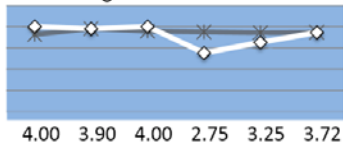
Goal Commitment



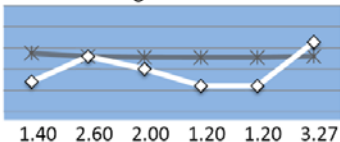
Institutional Commitment



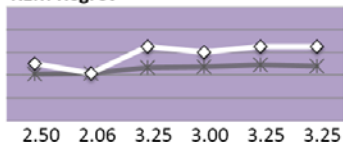
Social Integration



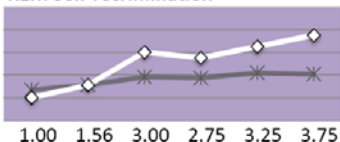
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 3
Better understand contents 5
Better feeling of comradery 5
Like lectures better 4

Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 3
Understood contents better 3
Had better feeling of comradery 2
Liked lectures better 4

Thought about dropping out in Master 3

Expectations Met 1

ID: 10 Alice

History: Bachelor Satisfaction 4.00
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 2

Characteristics

Social Susceptibility 50.0 /84
Preference for Consistency 3.94
Extraversion 2.5
Agreeableness 2.5
Conscientiousness 5.5
Emotional Stability 3.5
Openness to Experiences 4.5

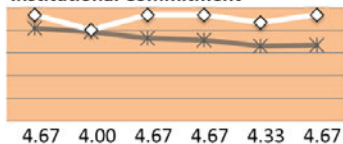
Personality

Number of Bachelor's Applications 2

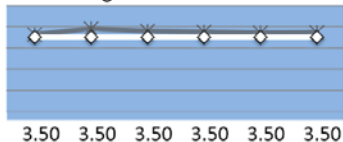
Alternatives

Number of Master's Applications 2
Number of Accepted Applications 1

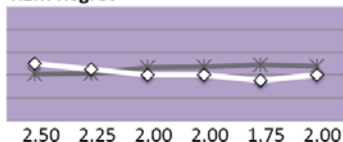
Institutional Commitment



Social Integration



REM Regret

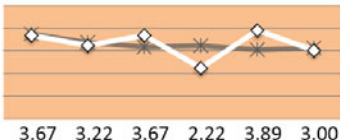


Expectations

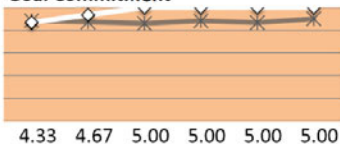
Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 5
Like lectures better 3

Thought about dropping out in Master 1

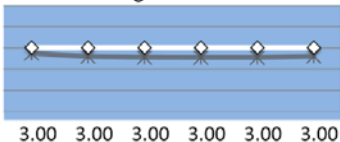
Satisfaction Master



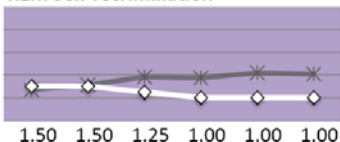
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 4
Liked lectures better 2

Expectations Met 2

ID: 11 Pauline

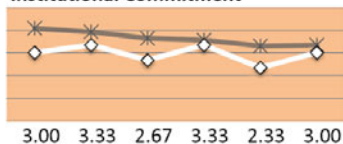
History: Bachelor Satisfaction 4.22
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 4

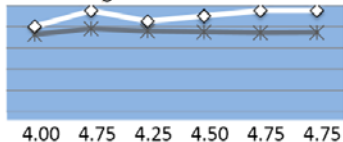
Characteristics

Social Susceptibility 32.0 /84
Preference for Consistency 3.11
Extraversion 5.0
Agreeableness 5.5
Conscientiousness 6.0
Emotional Stability 6.0
Openness to Experiences 3.5

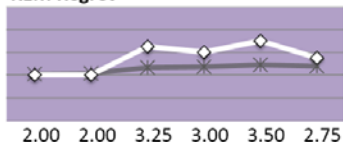
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 2
Be closer to Lecturers 3
Better understand contents 4
Better feeling of comradery 3
Like lectures better 3

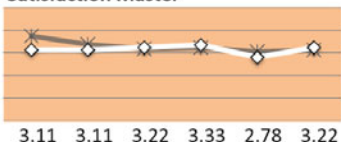
Thought about dropping out in Master 3

Number of Bachelor's Applications 6

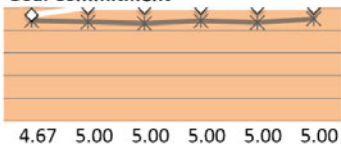
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 2

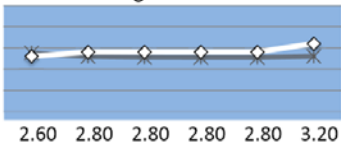
Satisfaction Master



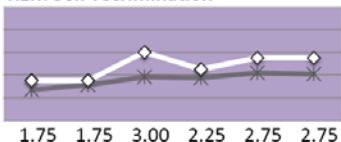
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 2
Understood contents better 3
Had better feeling of comradery 2
Liked lectures better 2

Expectations Met 2

ID: 12 Teresa

History: Bachelor Satisfaction 4.67
Thought about dropping out 1

Number of Bachelor's Applications 5

Investment: Origin Abitur 1
Bachelor 3

Alternatives

Number of Master's Applications 2

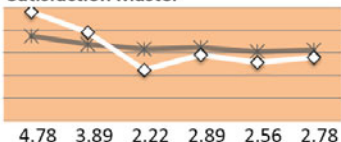
Number of Accepted Applications 2

Characteristics

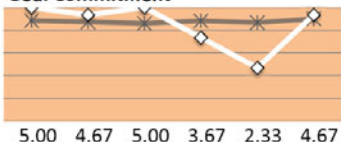
Social Susceptibility 28.0 /84
Preference for Consistency 3.28
Extraversion 2.5
Agreeableness 5.5
Conscientiousness 6.0
Emotional Stability 5.5
Openness to Experiences 5.0

Personality

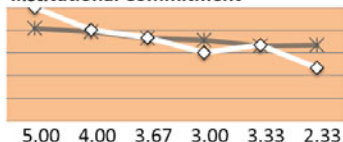
Satisfaction Master



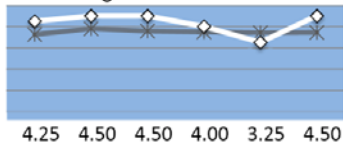
Goal Commitment



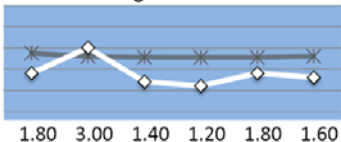
Institutional Commitment



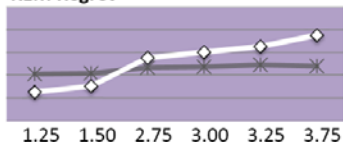
Social Integration



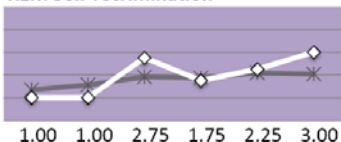
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 5
Better feeling of comradery 5
Like lectures better 4

Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 5
Liked lectures better 2

Thought about dropping out in Master 1

Expectations Met 1

ID: 13 Alexander

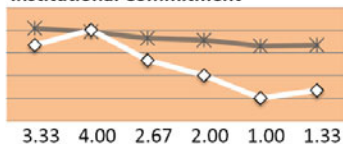
History: Bachelor Satisfaction 2.78
Thought about dropping out 1

Investment: Origin Abitur 1
Bachelor 1

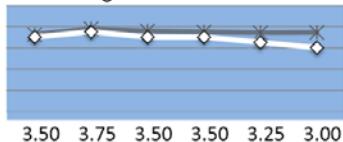
Characteristics

Social Susceptibility 54.0 /84
Preference for Consistency 4.17
Extraversion 2.5
Agreeableness 4.0
Conscientiousness 5.0
Emotional Stability 5.5
Openness to Experiences 3.5

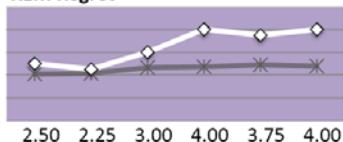
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 3
Like lectures better 4

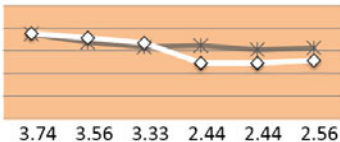
Thought about dropping out in Master 2

Number of Bachelor's Applications 3

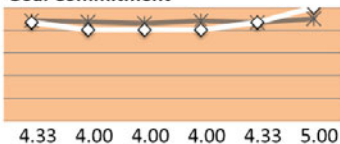
Alternatives

Number of Master's Applications 5
Number of Accepted Applications 5

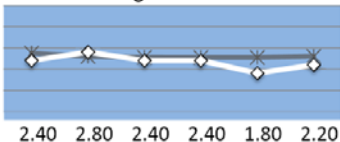
Satisfaction Master



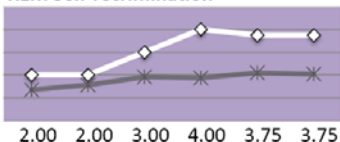
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 2
Understood contents better 1
Had better feeling of comradery 2
Liked lectures better 1

Expectations Met 1

ID: 14 Patrick

History: Bachelor Satisfaction 2.44
Thought about dropping out 3

Number of Bachelor's Applications 5

Investment: Origin Abitur 3
Bachelor 1

Alternatives

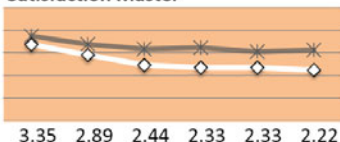
Number of Master's Applications 5
Number of Accepted Applications 5

Characteristics

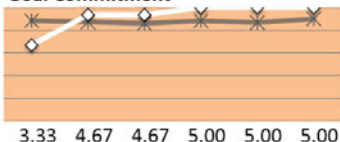
Social Susceptibility 43.0 /84
Preference for Consistency 3.83
Extraversion 4.5
Agreeableness 3.5
Conscientiousness 2.5
Emotional Stability 6.0
Openness to Experiences 4.0

Personality

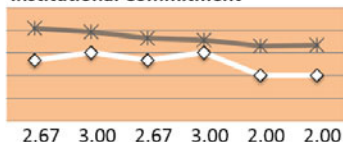
Satisfaction Master



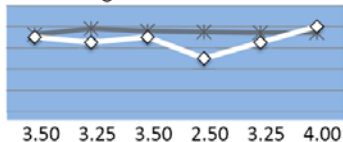
Goal Commitment



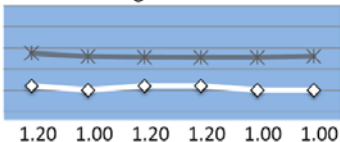
Institutional Commitment



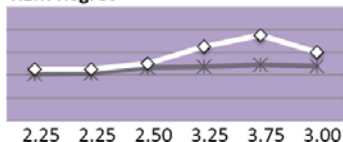
Social Integration



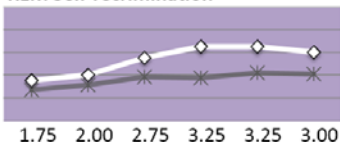
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 3
Like lectures better 4

Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 3
Understood contents better 3
Had better feeling of comradery 4
Liked lectures better 2

Thought about dropping out in Master 2

Expectations Met 1

ID: 15 Leonhard

History: Bachelor Satisfaction 1.89
Thought about dropping out 1

Number of Bachelor's Applications 3

Investment: Origin Abitur 3
Bachelor 3

Alternatives

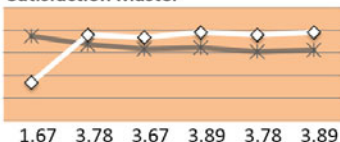
Number of Master's Applications 15
Number of Accepted Applications 4

Characteristics

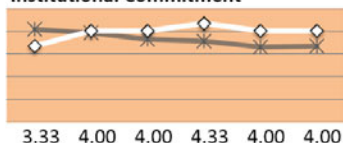
Social Susceptibility 55.0 /84
Preference for Consistency 3.39
Extraversion 0.0
Agreeableness 0.0
Conscientiousness 0.0
Emotional Stability 0.0
Openness to Experiences 0.0

Personality

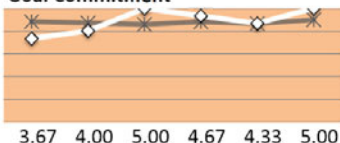
Satisfaction Master



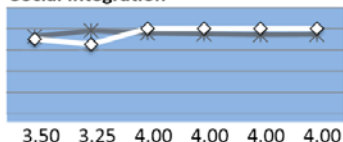
Institutional Commitment



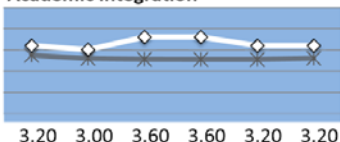
Goal Commitment



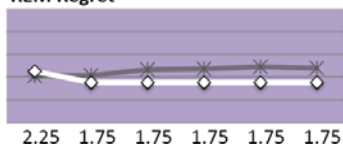
Social Integration



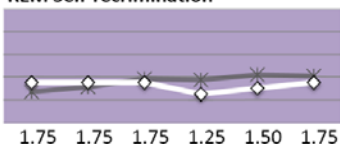
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 3
Like lectures better 3

Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 3
Understood contents better 4
Had better feeling of comradery 3
Liked lectures better 3

Thought about dropping out in Master 1

Expectations Met 2

ID: 16 Sonja

History: Bachelor Satisfaction 3.67
Thought about dropping out 1

Number of Bachelor's Applications 6

Investment: Origin Abitur 3
Bachelor 1

Alternatives

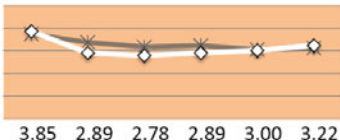
Number of Master's Applications 5
Number of Accepted Applications 3

Characteristics

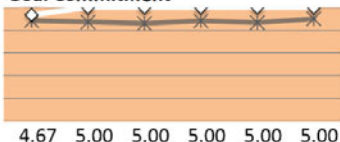
Social Susceptibility 35.0 /84
Preference for Consistency 3.39
Extraversion 6.0
Agreeableness 4.5
Conscientiousness 6.5
Emotional Stability 4.5
Openness to Experiences 4.0

Personality

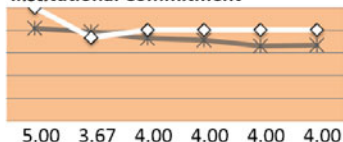
Satisfaction Master



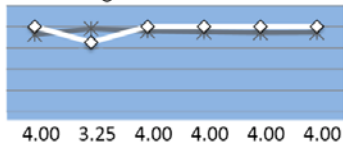
Goal Commitment



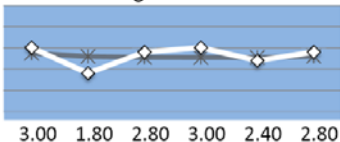
Institutional Commitment



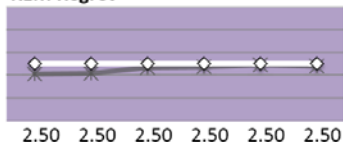
Social Integration



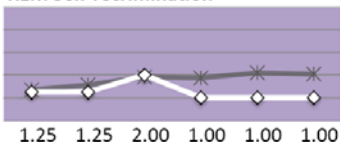
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 2
Be closer to Lecturers 2
Better understand contents 4
Better feeling of comradery 4
Like lectures better 5

Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 4
Liked lectures better 4

Thought about dropping out in Master 1

Expectations Met 2

ID: 17 Linda

History: Bachelor Satisfaction 3.44
Thought about dropping out 1

Number of Bachelor's Applications 3

Investment: Origin Abitur 3
Bachelor 3

Alternatives

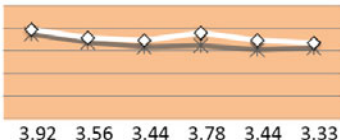
Number of Master's Applications 8
Number of Accepted Applications 6

Characteristics

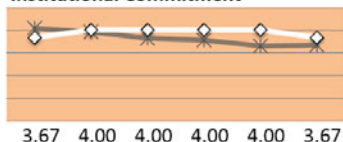
Social Susceptibility 25.0 /84
Preference for Consistency 2.56
Extraversion 3.5
Agreeableness 4.0
Conscientiousness 6.0
Emotional Stability 6.5
Openness to Experiences 4.0

Personality

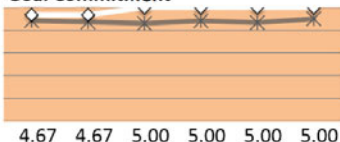
Satisfaction Master



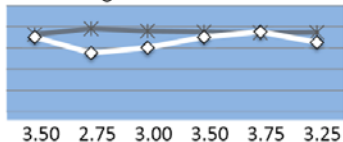
Institutional Commitment



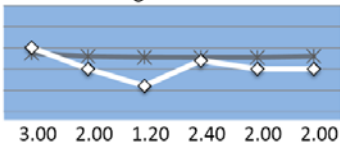
Goal Commitment



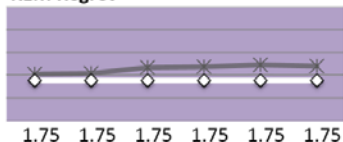
Social Integration



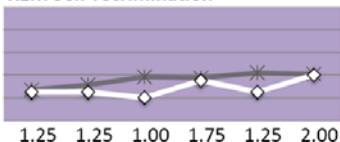
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 2
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 4
Like lectures better 4

Expectation Evaluation

Got to know other students better 1
Felt closer to Lecturers 2
Understood contents better 3
Had better feeling of comradery 1
Liked lectures better 2

Thought about dropping out in Master 1

Expectations Met 1

ID: 18 Karin

History: Bachelor Satisfaction 2.89
Thought about dropping out 2

Number of Bachelor's Applications 50

Investment: Origin Abitur 1
Bachelor 1

Alternatives

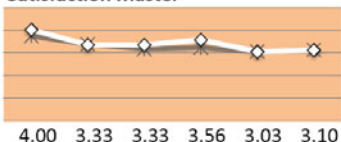
Number of Master's Applications 1
Number of Accepted Applications 1

Characteristics

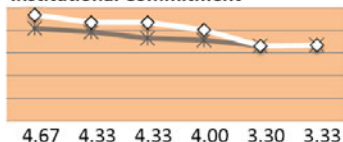
Social Susceptibility 50.0 /84
Preference for Consistency 0.00
Extraversion 4.5
Agreeableness 5.0
Conscientiousness 5.5
Emotional Stability 5.0
Openness to Experiences 4.5

Personality

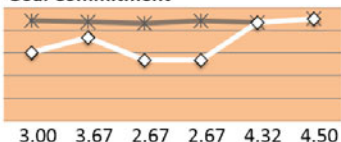
Satisfaction Master



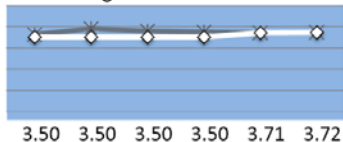
Institutional Commitment



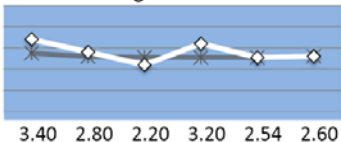
Goal Commitment



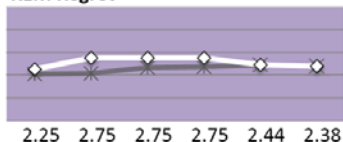
Social Integration



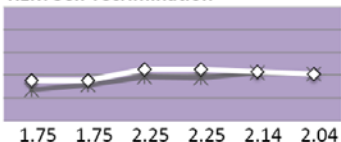
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 5
Like lectures better 4

Expectation Evaluation

Got to know other students better 0
Felt closer to Lecturers 0
Understood contents better 0
Had better feeling of comradery 0
Liked lectures better 0

Thought about dropping out in Master 0

Expectations Met 0

ID: 19 Daniela

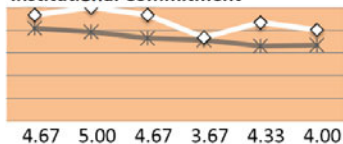
History: Bachelor Satisfaction 4.22
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 1

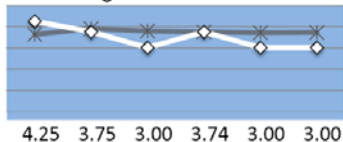
Characteristics

Social Susceptibility 41.0 /84
Preference for Consistency 2.94
Extraversion 6.0
Agreeableness 5.5
Conscientiousness 4.0
Emotional Stability 5.5
Openness to Experiences 6.0

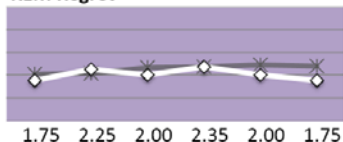
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 1
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 4
Like lectures better 4

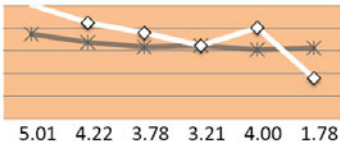
Thought about dropping out in Master 1

Number of Bachelor's Applications 1

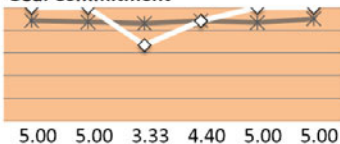
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 2

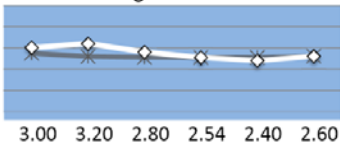
Satisfaction Master



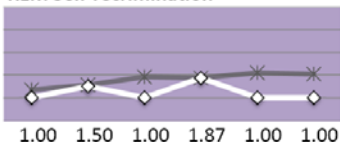
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 2
Liked lectures better 3

Expectations Met 2

ID: 20 Andrea

History: Bachelor Satisfaction 2.89
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

Characteristics

Social Susceptibility 27.0 /84
Preference for Consistency 3.00
Extraversion 5.5
Agreeableness 4.0
Conscientiousness 6.5
Emotional Stability 5.0
Openness to Experiences 6.0

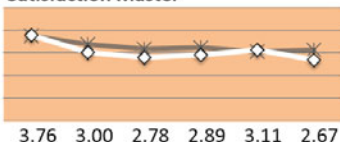
Personality

Number of Bachelor's Applications 1

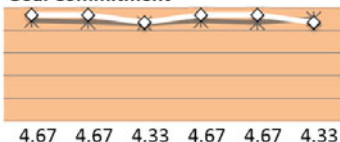
Alternatives

Number of Master's Applications 4
Number of Accepted Applications 2

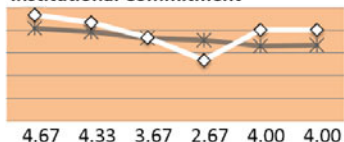
Satisfaction Master



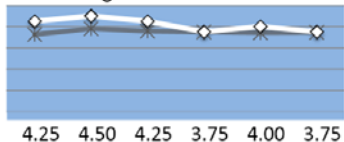
Goal Commitment



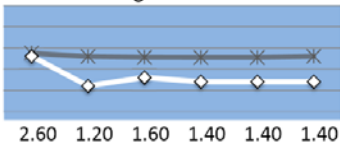
Institutional Commitment



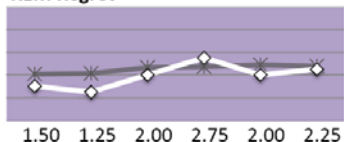
Social Integration



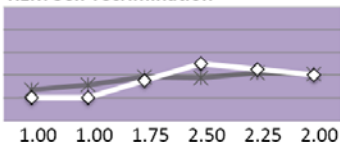
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 4
Be closer to Lecturers 5
Better understand contents 3
Better feeling of comradery 4
Like lectures better 3

Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 2
Liked lectures better 4

Thought about dropping out in Master 2

Expectations Met 2

ID: 21 Gisela

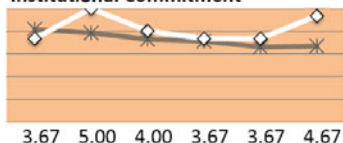
History: Bachelor Satisfaction 3.22
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 3

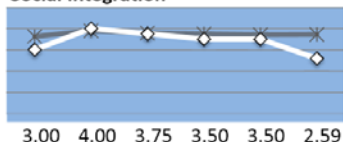
Characteristics

Social Susceptibility 80.0 /84
Preference for Consistency 4.06
Extraversion 2.5
Agreeableness 5.5
Conscientiousness 6.0
Emotional Stability 3.5
Openness to Experiences 4.0

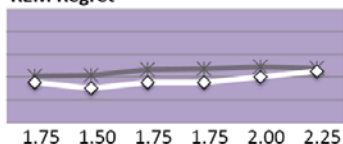
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 5
Like lectures better 5

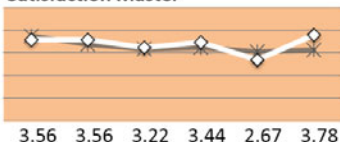
Thought about dropping out in Master 1

Number of Bachelor's Applications 1

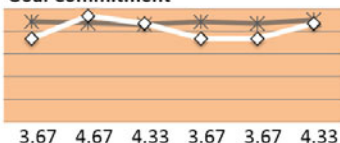
Alternatives

Number of Master's Applications 4
Number of Accepted Applications 2

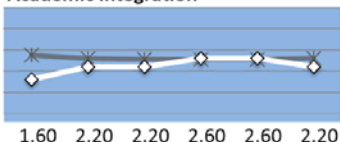
Satisfaction Master



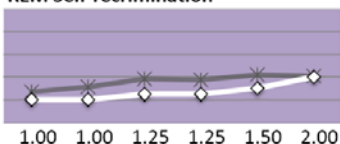
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 2
Liked lectures better 4

Expectations Met 1

ID: 22 Karla

History: Bachelor Satisfaction 2.33
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

Characteristics

Social Susceptibility 38.0 /84
Preference for Consistency 2.33
Extraversion 4.5
Agreeableness 4.5
Conscientiousness 4.5
Emotional Stability 2.5
Openness to Experiences 5.5

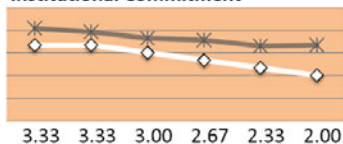
Personality

Number of Bachelor's Applications 5

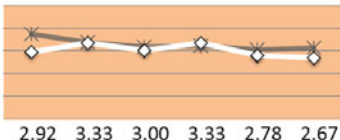
Alternatives

Number of Master's Applications 4
Number of Accepted Applications 3

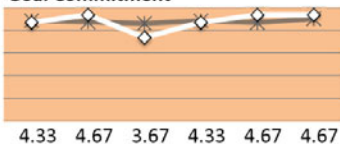
Institutional Commitment



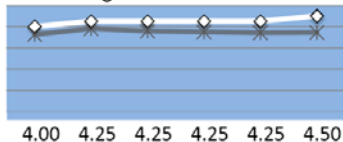
Satisfaction Master



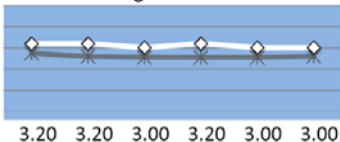
Goal Commitment



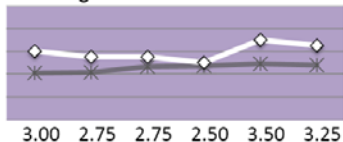
Social Integration



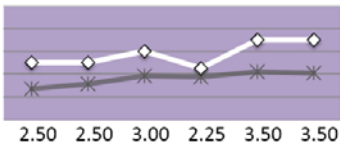
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 2
Like lectures better 2

Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 2
Liked lectures better 2

Thought about dropping out in Master 1

Expectations Met 2

ID: 23 Lara

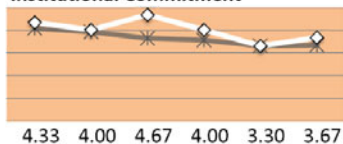
History: Bachelor Satisfaction 3.33
Thought about dropping out 1

Investment: Origin Abitur 2
Bachelor 2

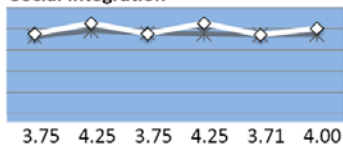
Characteristics

Social Susceptibility 23.0 /84
Preference for Consistency 0.00
Extraversion 5.5
Agreeableness 4.5
Conscientiousness 6.5
Emotional Stability 5.0
Openness to Experiences 6.0

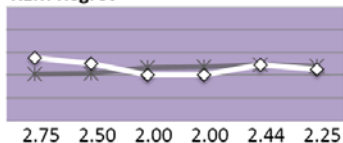
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 2
Be closer to Lecturers 3
Better understand contents 4
Better feeling of comradery 5
Like lectures better 3

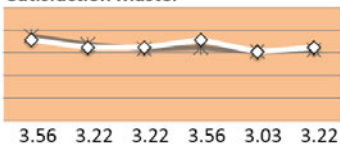
Thought about dropping out in Master 1

Number of Bachelor's Applications 6

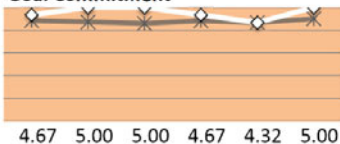
Alternatives

Number of Master's Applications 1
Number of Accepted Applications 1

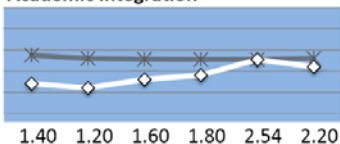
Satisfaction Master



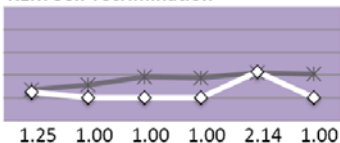
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 4
Liked lectures better 4

Expectations Met 2

ID: 24 Lisa

History: Bachelor Satisfaction 2.78
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

Characteristics

Social Susceptibility 28.0 /84
Preference for Consistency 3.33
Extraversion 3.5
Agreeableness 5.5
Conscientiousness 4.5
Emotional Stability 5.0
Openness to Experiences 5.5

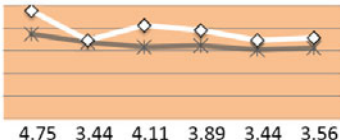
Personality

Number of Bachelor's Applications 1

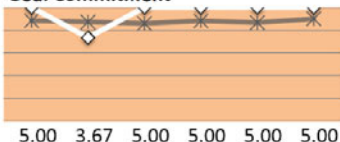
Alternatives

Number of Master's Applications 6
Number of Accepted Applications 1

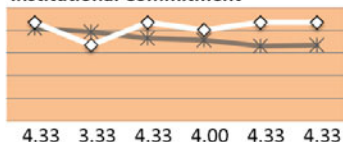
Satisfaction Master



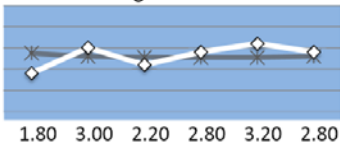
Goal Commitment



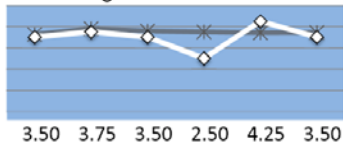
Institutional Commitment



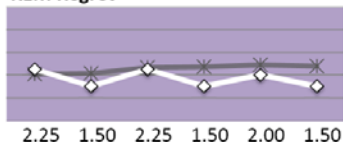
Academic Integration



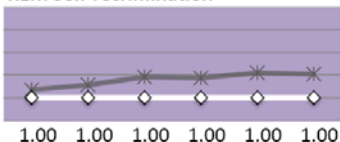
Social Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 4
Like lectures better 5

Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 3
Liked lectures better 4

Thought about dropping out in Master 1

Expectations Met 2

ID: 25 Saskia

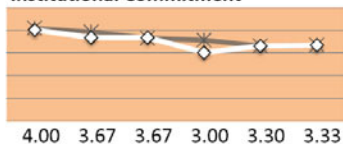
History: Bachelor Satisfaction 2.11
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 3

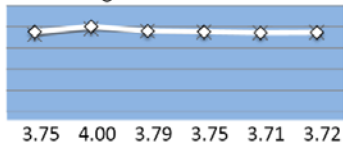
Characteristics

Social Susceptibility 0.0 /84
Preference for Consistency 0.00
Extraversion 3.0
Agreeableness 5.0
Conscientiousness 6.0
Emotional Stability 5.5
Openness to Experiences 6.5

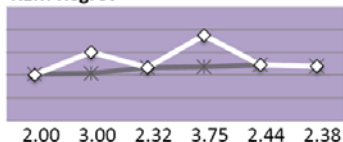
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 3
Like lectures better 4

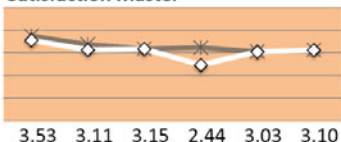
Thought about dropping out in Master 0

Number of Bachelor's Applications 6

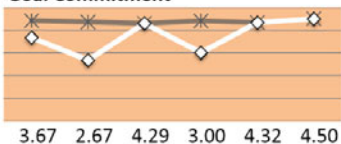
Alternatives

Number of Master's Applications 6
Number of Accepted Applications 5

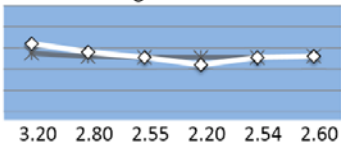
Satisfaction Master



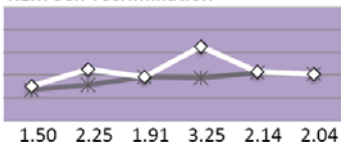
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 0
Felt closer to Lecturers 0
Understood contents better 0
Had better feeling of comradery 0
Liked lectures better 0

Expectations Met 0

ID: 26 Malte

History: Bachelor Satisfaction 3.67
Thought about dropping out 1

Number of Bachelor's Applications 10

Investment: Origin Abitur 3
Bachelor 3

Alternatives

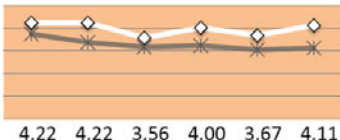
Number of Master's Applications 1
Number of Accepted Applications 1

Characteristics

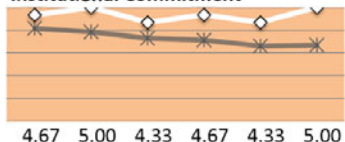
Social Susceptibility 18.0 /84
Preference for Consistency 3.06
Extraversion 3.0
Agreeableness 3.5
Conscientiousness 5.5
Emotional Stability 4.5
Openness to Experiences 4.5

Personality

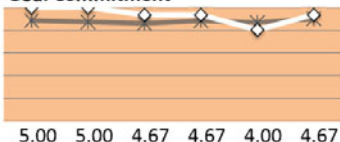
Satisfaction Master



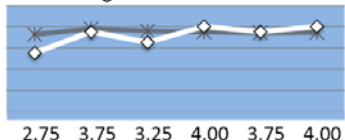
Institutional Commitment



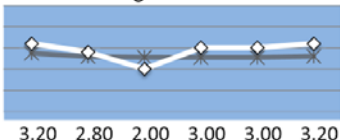
Goal Commitment



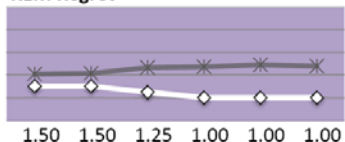
Social Integration



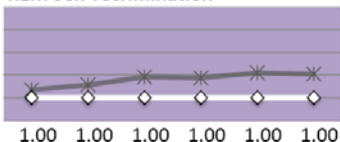
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 3
Better feeling of comradery 4
Like lectures better 3

Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 5
Liked lectures better 3

Thought about dropping out in Master 2

Expectations Met 2

ID: 27 Frank

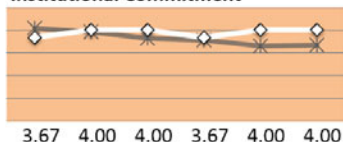
History: Bachelor Satisfaction 3.67
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 3

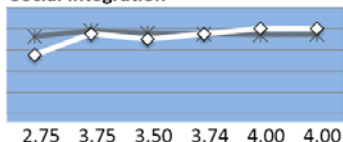
Characteristics

Social Susceptibility 0.0 /84
Preference for Consistency 2.94
Extraversion 2.5
Agreeableness 3.5
Conscientiousness 5.5
Emotional Stability 5.5
Openness to Experiences 4.0

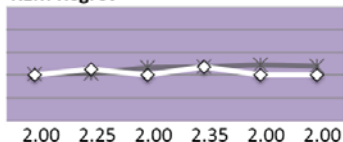
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 4
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 3
Like lectures better 3

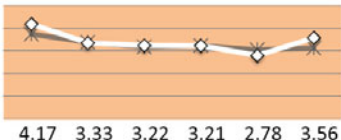
Thought about dropping out in Master 2

Number of Bachelor's Applications 4

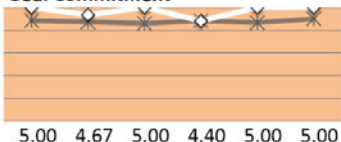
Alternatives

Number of Master's Applications 4
Number of Accepted Applications 4

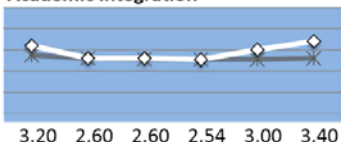
Satisfaction Master



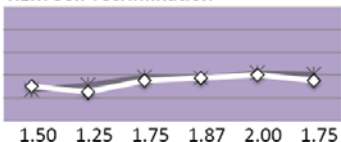
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 5
Liked lectures better 3

Expectations Met 2

ID: 28 Peter

History: Bachelor Satisfaction 3.56
Thought about dropping out 1

Number of Bachelor's Applications 6

Investment: Origin Abitur 1
Bachelor 1

Alternatives

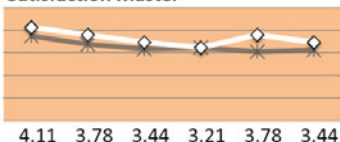
Number of Master's Applications 1
Number of Accepted Applications 1

Characteristics

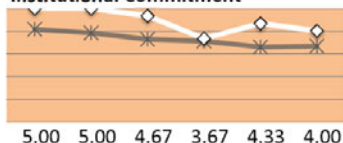
Social Susceptibility 44.0 /84
Preference for Consistency 3.06
Extraversion 4.0
Agreeableness 4.5
Conscientiousness 5.5
Emotional Stability 6.5
Openness to Experiences 3.0

Personality

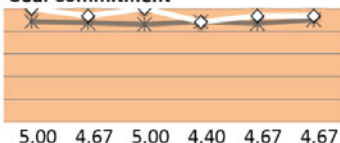
Satisfaction Master



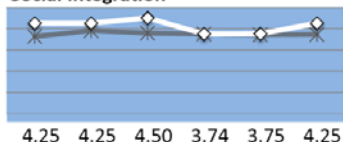
Institutional Commitment



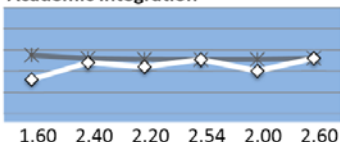
Goal Commitment



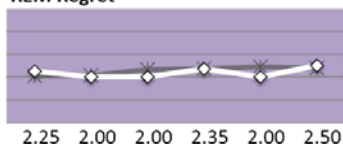
Social Integration



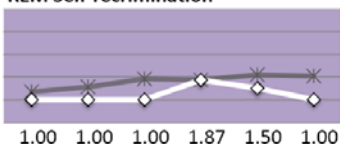
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 3
Like lectures better 5

Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 5
Understood contents better 3
Had better feeling of comradery 4
Liked lectures better 3

Thought about dropping out in Master 1

Expectations Met 2

ID: 29 Rosemarie

History: Bachelor Satisfaction 3.11
Thought about dropping out 1

Number of Bachelor's Applications 7

Investment: Origin Abitur 3
Bachelor 3

Alternatives

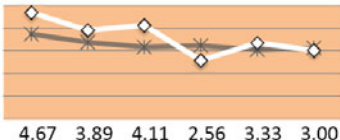
Number of Master's Applications 3
Number of Accepted Applications 3

Characteristics

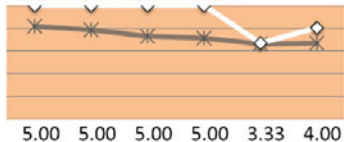
Social Susceptibility 66.0 /84
Preference for Consistency 3.94
Extraversion 6.5
Agreeableness 4.0
Conscientiousness 4.0
Emotional Stability 4.5
Openness to Experiences 6.5

Personality

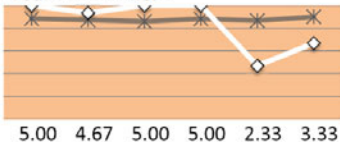
Satisfaction Master



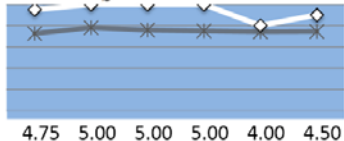
Institutional Commitment



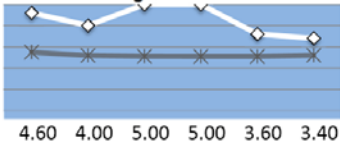
Goal Commitment



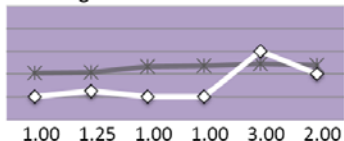
Social Integration



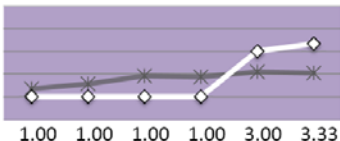
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 5
Better feeling of comradery 5
Like lectures better 5

Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 5
Had better feeling of comradery 5
Liked lectures better 5

Thought about dropping out in Master 0

Expectations Met 2

ID: 30 Bettina

History: Bachelor Satisfaction 3.22
Thought about dropping out 1

Investment: Origin Abitur 1
Bachelor 1

Characteristics

Social Susceptibility 39.0 /84
Preference for Consistency 3.50
Extraversion 3.5
Agreeableness 4.0
Conscientiousness 5.0
Emotional Stability 3.5
Openness to Experiences 5.0

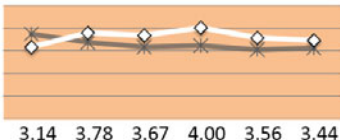
Personality

Number of Bachelor's Applications 3

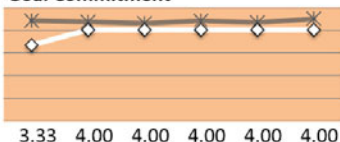
Alternatives

Number of Master's Applications 4
Number of Accepted Applications 3

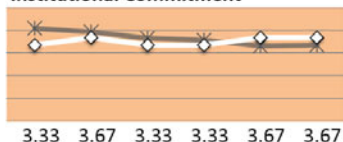
Satisfaction Master



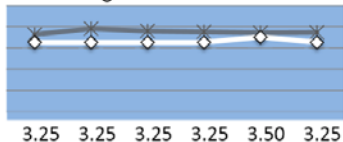
Goal Commitment



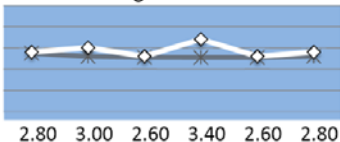
Institutional Commitment



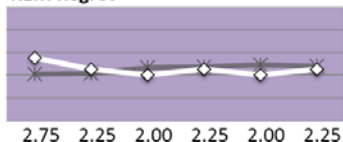
Social Integration



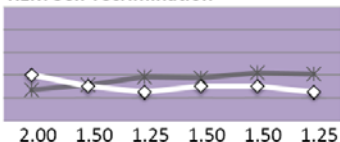
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 3
Be closer to Lecturers 4
Better understand contents 3
Better feeling of comradery 3
Like lectures better 4

Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 4
Understood contents better 3
Had better feeling of comradery 3
Liked lectures better 4

Thought about dropping out in Master 1

Expectations Met 2

ID: 31 Nikola

History: Bachelor Satisfaction 3.78
Thought about dropping out 1

Investment: Origin Abitur 1
Bachelor 3

Characteristics

Social Susceptibility 33.0 /84
Preference for Consistency 3.89
Extraversion 3.0
Agreeableness 5.0
Conscientiousness 6.0
Emotional Stability 3.5
Openness to Experiences 5.0

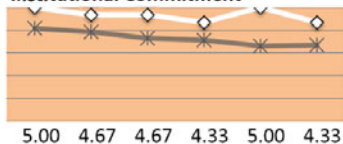
Personality

Number of Bachelor's Applications 1

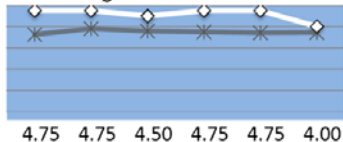
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 3

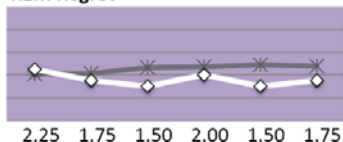
Institutional Commitment



Social Integration



REM Regret

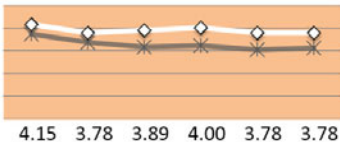


Expectations

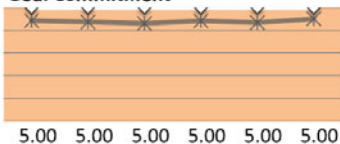
Get to know other students better 4
Be closer to Lecturers 3
Better understand contents 5
Better feeling of comradery 2
Like lectures better 4

Thought about dropping out in Master 1

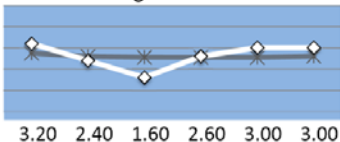
Satisfaction Master



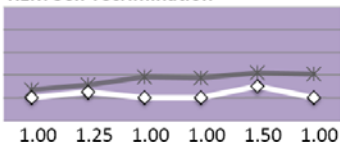
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 3
Understood contents better 3
Had better feeling of comradery 2
Liked lectures better 5

Expectations Met 2

ID: 32 Lotte

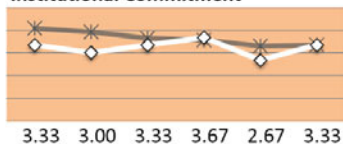
History: Bachelor Satisfaction 3.89
Thought about dropping out 1

Investment: Origin Abitur 1
Bachelor 3

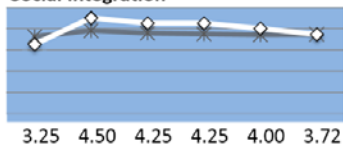
Characteristics

Social Susceptibility 39.0 /84
Preference for Consistency 3.50
Extraversion 4.0
Agreeableness 3.5
Conscientiousness 5.0
Emotional Stability 5.5
Openness to Experiences 4.5

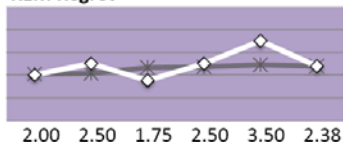
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 5
Be closer to Lecturers 4
Better understand contents 5
Better feeling of comradery 4
Like lectures better 4

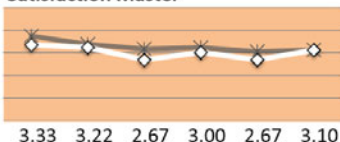
Thought about dropping out in Master 0

Number of Bachelor's Applications 5

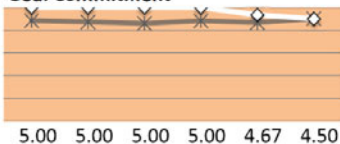
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 3

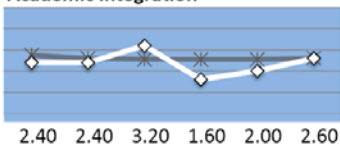
Satisfaction Master



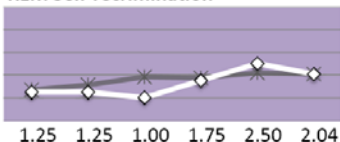
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 0
Felt closer to Lecturers 0
Understood contents better 0
Had better feeling of comradery 0
Liked lectures better 0

Expectations Met 0

ID: 33 Maria

History: Bachelor Satisfaction 1.89
Thought about dropping out 1

Number of Bachelor's Applications 1

Investment: Origin Abitur 3
Bachelor 3

Alternatives

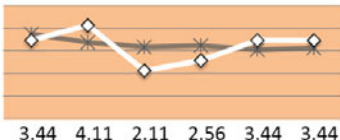
Number of Master's Applications 8
Number of Accepted Applications 7

Characteristics

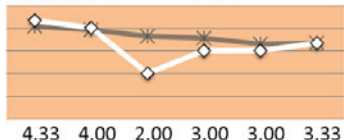
Social Susceptibility 46.0 /84
Preference for Consistency 2.94
Extraversion 4.0
Agreeableness 4.5
Conscientiousness 5.5
Emotional Stability 4.5
Openness to Experiences 5.5

Personality

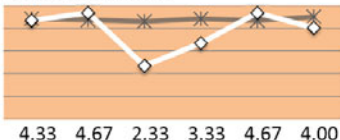
Satisfaction Master



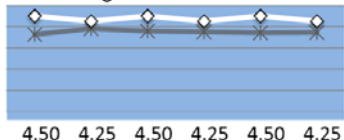
Institutional Commitment



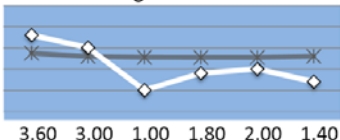
Goal Commitment



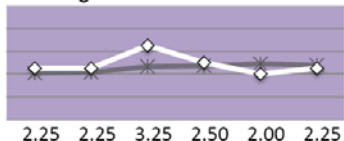
Social Integration



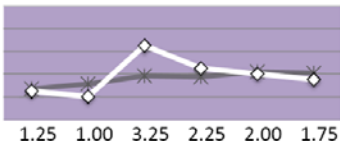
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 3
Better understand contents 4
Better feeling of comradery 5
Like lectures better 5

Expectation Evaluation

Got to know other students better 5
Felt closer to Lecturers 4
Understood contents better 4
Had better feeling of comradery 5
Liked lectures better 3

Thought about dropping out in Master 2

Expectations Met 2

ID: 34 Louisa

History: Bachelor Satisfaction 4.11
Thought about dropping out 1

Number of Bachelor's Applications 10

Investment: Origin Abitur 3
Bachelor 2

Alternatives

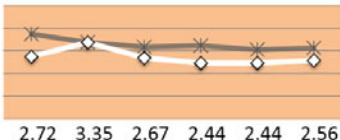
Number of Master's Applications 5
Number of Accepted Applications 5

Characteristics

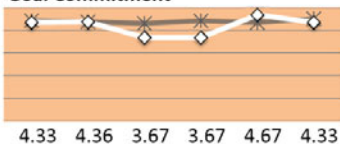
Social Susceptibility 42.0 /84
Preference for Consistency 3.00
Extraversion 0.0
Agreeableness 0.0
Conscientiousness 0.0
Emotional Stability 0.0
Openness to Experiences 0.0

Personality

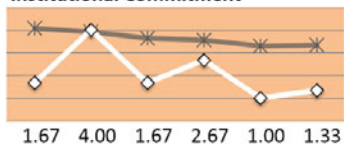
Satisfaction Master



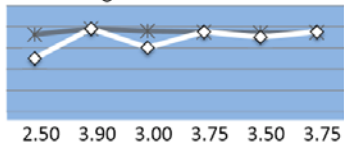
Goal Commitment



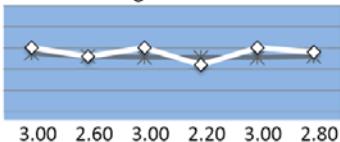
Institutional Commitment



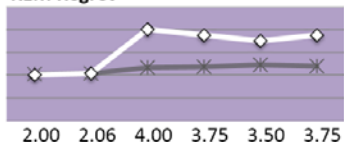
Social Integration



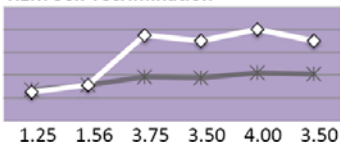
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 4
Better understand contents 2
Better feeling of comradery 3
Like lectures better 2

Expectation Evaluation

Got to know other students better 2
Felt closer to Lecturers 3
Understood contents better 2
Had better feeling of comradery 2
Liked lectures better 2

Thought about dropping out in Master 2

Expectations Met 1

ID: 35 Volker

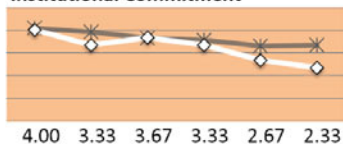
History: Bachelor Satisfaction 3.33
Thought about dropping out 1

Investment: Origin Abitur 3
Bachelor 3

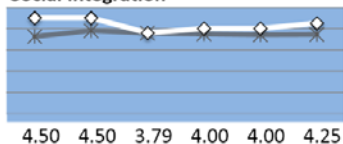
Characteristics

Social Susceptibility 0.0 /84
Preference for Consistency 2.89
Extraversion 3.5
Agreeableness 2.5
Conscientiousness 3.5
Emotional Stability 6.0
Openness to Experiences 6.5

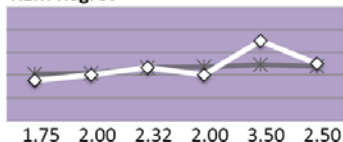
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 4
Better feeling of comradery 5
Like lectures better 5

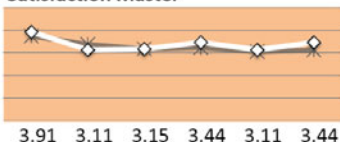
Thought about dropping out in Master 1

Number of Bachelor's Applications 2

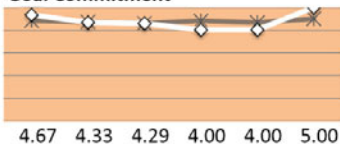
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 1

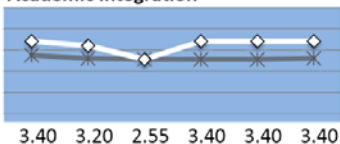
Satisfaction Master



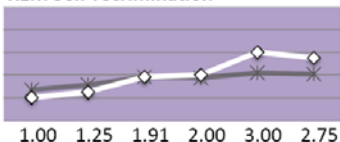
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 5
Understood contents better 4
Had better feeling of comradery 4
Liked lectures better 2

Expectations Met 1

ID: 36 Berta

History: Bachelor Satisfaction 4.11
Thought about dropping out 2

Number of Bachelor's Applications 10

Investment: Origin Abitur 1
Bachelor 1

Alternatives

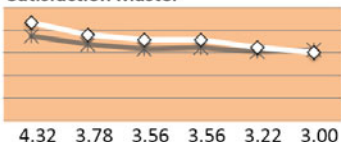
Number of Master's Applications 10
Number of Accepted Applications 3

Characteristics

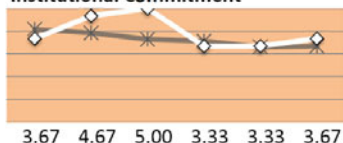
Social Susceptibility 50.0 /84
Preference for Consistency 3.06
Extraversion 2.5
Agreeableness 4.0
Conscientiousness 3.0
Emotional Stability 2.0
Openness to Experiences 5.5

Personality

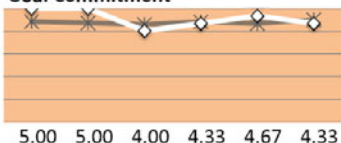
Satisfaction Master



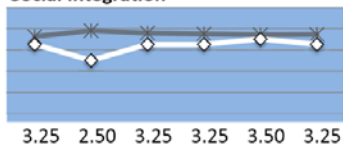
Institutional Commitment



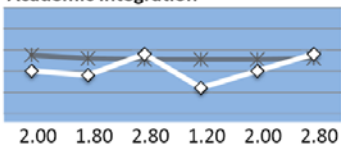
Goal Commitment



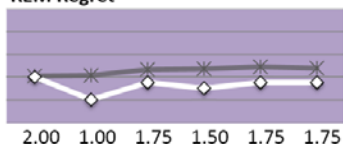
Social Integration



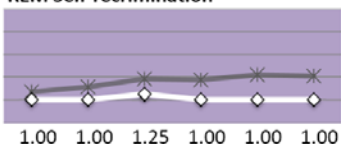
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 5
Better feeling of comradery 3
Like lectures better 5

Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 4
Understood contents better 5
Had better feeling of comradery 1
Liked lectures better 4

Thought about dropping out in Master 2

Expectations Met 1

ID: 37 Oliver

History: Bachelor Satisfaction 3.22
Thought about dropping out 1

Number of Bachelor's Applications 10

Investment: Origin Abitur 3
Bachelor 3

Alternatives

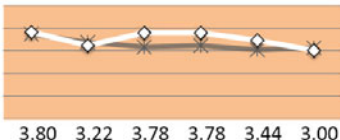
Number of Master's Applications 5
Number of Accepted Applications 2

Characteristics

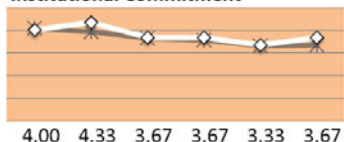
Social Susceptibility 22.0 /84
Preference for Consistency 2.83
Extraversion 2.0
Agreeableness 4.0
Conscientiousness 4.0
Emotional Stability 4.5
Openness to Experiences 6.0

Personality

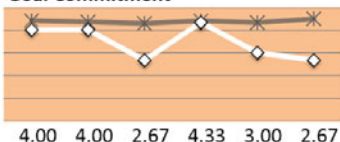
Satisfaction Master



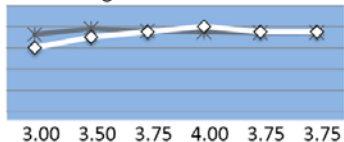
Institutional Commitment



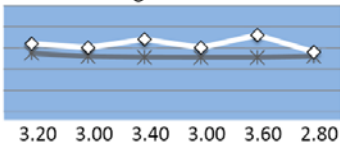
Goal Commitment



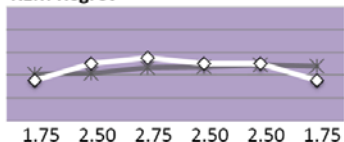
Social Integration



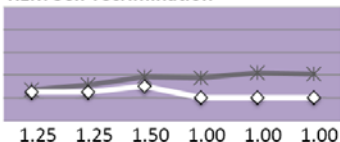
Academic Integration



REM Regret



REM Self-recrimination



Expectations

Get to know other students better 5
Be closer to Lecturers 5
Better understand contents 2
Better feeling of comradery 5
Like lectures better 3

Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 4
Understood contents better 2
Had better feeling of comradery 4
Liked lectures better 3

Thought about dropping out in Master 2

Expectations Met 2

ID: 38 Stefan

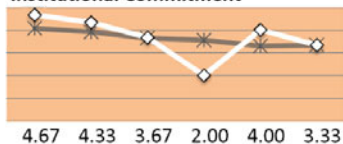
History: Bachelor Satisfaction 3.67
Thought about dropping out 2

Investment: Origin Abitur 1
Bachelor 3

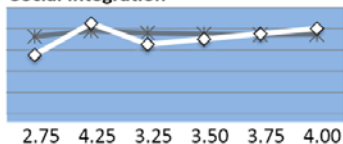
Characteristics

Social Susceptibility 43.0 /84
Preference for Consistency 2.50
Extraversion 1.5
Agreeableness 2.0
Conscientiousness 6.0
Emotional Stability 5.0
Openness to Experiences 5.5

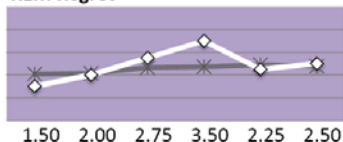
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 4
Be closer to Lecturers 2
Better understand contents 4
Better feeling of comradery 2
Like lectures better 3

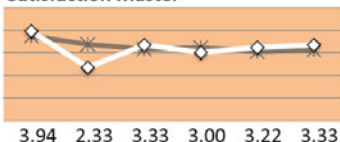
Thought about dropping out in Master 2

Number of Bachelor's Applications 3

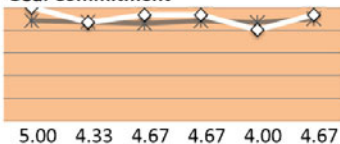
Alternatives

Number of Master's Applications 3
Number of Accepted Applications 2

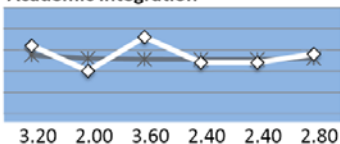
Satisfaction Master



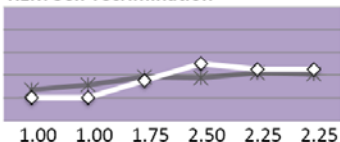
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 1
Understood contents better 2
Had better feeling of comradery 1
Liked lectures better 2

Expectations Met 1

ID: 39 Rike

History: Bachelor Satisfaction 3.22
Thought about dropping out 2

Investment: Origin Abitur 3
Bachelor 3

Characteristics

Social Susceptibility 53.0 /84
Preference for Consistency 3.39
Extraversion 5.0
Agreeableness 5.0
Conscientiousness 5.0
Emotional Stability 5.0
Openness to Experiences 5.0

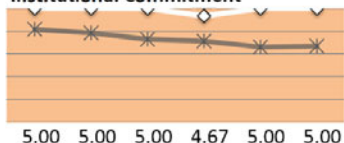
Personality

Number of Bachelor's Applications 1

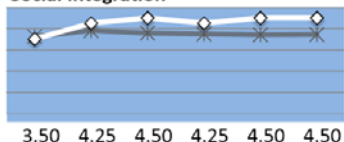
Alternatives

Number of Master's Applications 6
Number of Accepted Applications 3

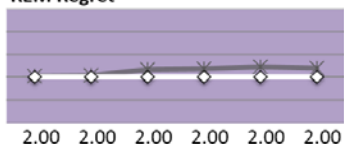
Institutional Commitment



Social Integration



REM Regret

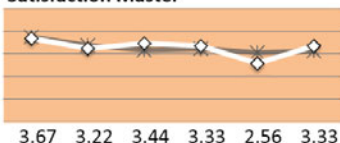


Expectations

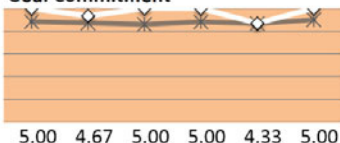
Get to know other students better 2
Be closer to Lecturers 4
Better understand contents 4
Better feeling of comradery 3
Like lectures better 4

Thought about dropping out in Master 2

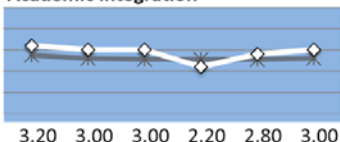
Satisfaction Master



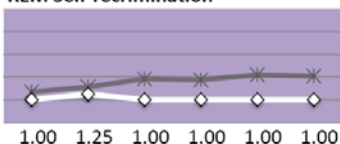
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 4
Felt closer to Lecturers 5
Understood contents better 3
Had better feeling of comradery 4
Liked lectures better 3

Expectations Met 2

ID: 40 Ty

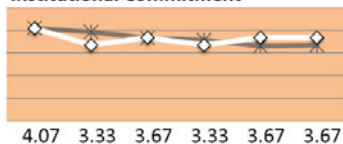
History: Bachelor Satisfaction 0.00
Thought about dropping out 0

Investment: Origin Abitur 0
Bachelor 0

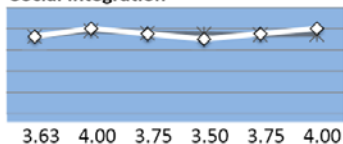
Characteristics

Social Susceptibility 51.0 /84
Preference for Consistency 2.72
Extraversion 6.5
Agreeableness 4.5
Conscientiousness 6.0
Emotional Stability 4.5
Openness to Experiences 5.0

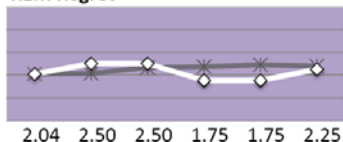
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 0
Be closer to Lecturers 0
Better understand contents 0
Better feeling of comradery 0
Like lectures better 0

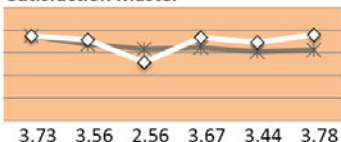
Thought about dropping out in Master 1

Number of Bachelor's Applications 0

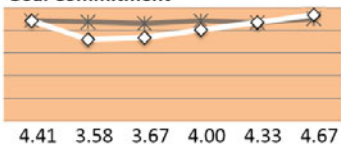
Alternatives

Number of Master's Applications 0
Number of Accepted Applications 0

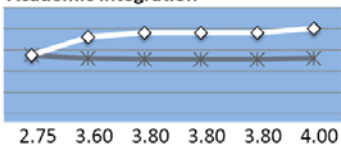
Satisfaction Master



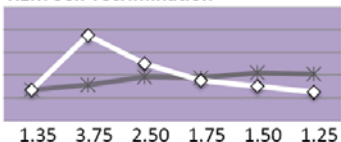
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 3
Felt closer to Lecturers 3
Understood contents better 4
Had better feeling of comradery 4
Liked lectures better 3

Expectations Met 0

ID: 41 Bo

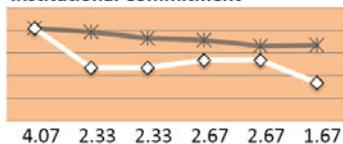
History: Bachelor Satisfaction 0.00
Thought about dropping out 0

Investment: Origin Abitur 0
Bachelor 0

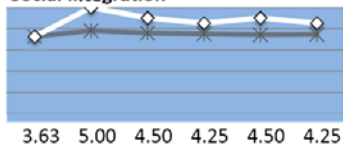
Characteristics

Social Susceptibility 59.0 /84
Preference for Consistency 3.44
Extraversion 5.5
Agreeableness 4.0
Conscientiousness 5.0
Emotional Stability 4.5
Openness to Experiences 6.0

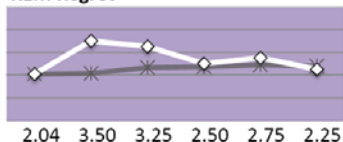
Institutional Commitment



Social Integration



REM Regret



Expectations

Get to know other students better 0
Be closer to Lecturers 0
Better understand contents 0
Better feeling of comradery 0
Like lectures better 0

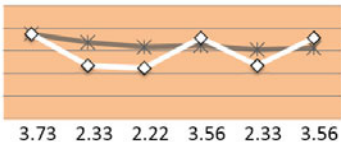
Thought about dropping out in Master 2

Number of Bachelor's Applications 0

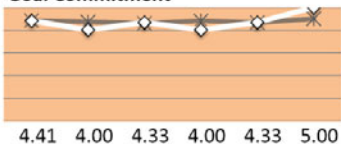
Alternatives

Number of Master's Applications 0
Number of Accepted Applications 0

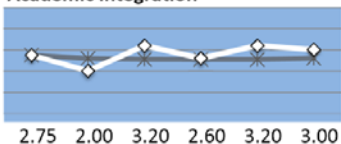
Satisfaction Master



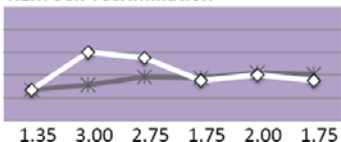
Goal Commitment



Academic Integration



REM Self-recrimination



Expectation Evaluation

Got to know other students better 1
Felt closer to Lecturers 1
Understood contents better 4
Had better feeling of comradery 1
Liked lectures better 2

Expectations Met 0

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