Bespoke interaction

The influence of customized interactions on perceived service quality

The case of private residential projects

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Name: Thymen Thorsten Sieval

University

Institution: Delft University of Technology

Address: Julianalaan 134, 2628 SL, Delft, The Netherlands

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Supervisors

First mentor: Dr. Ir. H.J.M. Vande Putte

Second mentor: Prof.dr. P.W. Chan

Delegate of board: Dr. Ir. R.J. Nottrot

Colofon

TU Delft BK Bouwkunde — Department of Management in the Built Environment

Abstract

Clients and architects drift apart due to a lack of communication (Angral, 2019). Their relationships deteriorate. Relationship quality is seen as a key determinant for (dis-)satisfaction with clients. So, a lack of communication induces less successful projects. Architects could be more client oriented. Furthermore, it seems that architects rarely rely on formalized procedures for (customizing) client interactions. Therefore, this research investigates: *"(How) can customized interactions influence perceived service quality, in the case of private residential projects?*

To answer this question three explorative case studies were conducted at different international architecture offices. The cases (architecture firms) were selected based on their size (small) and vision to incorporate clients in their designing processes. Every firm responded with two to three projects as units for research (projects). The units were first introduced via a survey about the interactions used. These first survey findings were used as input for the consecutive client interviews by which clients were asked to reflect on these interactions. The clients were purposely selected for having both none and earlier experience, as research revealed service perception significantly differs amongst those groups. Also, the clients were asked about recommendations on service improvement. Finally, with the previous data in consideration, architects were interviewed about their view on the interactions and improvements for these projects.

With the interview data a model was constructed to identify the customizations. It was found that on average for the individual projects the customizations did contribute to a higher service quality. Yet, when comparing the SQ ratings with the number of customizations in all the cases, only a minor correlation between the perceived service quality and customizations was found, the significance of this relationship is limited, and the method of interviews and analysis, were too sensitive to be able construct a well-supported argument on the moderating effect of interactions on service quality. When implementing customizations, it is deemed especially important for the architect to use his soft skills and experience to decide whether and which customizations should be implemented. Especially the type of client and project should be taken into consideration. Considering the different project phases, a person-oriented customization might be more appropriate at the briefing phases, to strengthen the relationship, while in the designing phases also task-based customizations could be done, to also improve the technical quality. Furthermore, it is argued that with the rise of new technology and digitalization architects can improve their communication and education subsequently. Especially for unexperienced client's, digital education & designing tools could help them in both increasing their understanding and participation in the project, which contribute to their perception of the service quality. This is deemed especially important for the industry of bespoke projects and private residential projects where both clients and architects seek for the best services. Considering the communicative nature of this projects, introvert architects should be aware that appropriate soft skills are to be implemented to increase service quality. Especially for introvert architects, this should be monitored and trained if needed. If not, it is recommended, to allocate the communication to team members or a project manager.

Furthermore, this explorative study reveals, this initial model can be a basis to define a default or benchmark of interactions and customizations in this field. Next research could further define the models' parameters and include more, and less successful projects to improve reliability.

Keywords

Architect-Client Interaction, Customization, Service Quality, Private residential projects

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Preface

In my studies I have wanted to combine two major passions. There is a strong passion for high-quality, unique, and bespoke architecture in natural sites. In my undergraduate studies I was able to devote a lot of time and attention to this first passion. The other passion is about being in contact with people and making people happy. I love the versatility of people and collaborating and managing groups. For this reason, I pursued the Master of Science, Management in the Built Environment at the Technical University of Delft, of which this thesis is the final product. In the thesis itself, I searched for a topic that touches both passions, which is also relevant to the current and underexplored research field.

Even before writing the thesis, I was always fascinated by exclusive and capital-intensive residency projects, where architect seems to have all freedom to design beautiful residences of the highest quality. I always felt the tension with clients that spend a huge capital on a service and outcome they don't fully understand themselves. Architects often design to clients' wishes, as far as possible, but also often must deal with other constraints and, on top of that, they have an artistic vision by themselves. I am therefore not surprised to regularly hear about difficult relationships in these types of projects. However, I do believe we, as people, have the potential to achieve great success by closer collaborations. Also, these types of projects made me wonder how far architect can go in customizing not only their design (as a product), but also the process of interaction (to get to this product).

By investigating the services and interactions of architects for clients in private residential projects, I hope to have found solutions that contribute to improving the relationship between clients and architects. In doing so, it would help to reappraise the fine profession of the architect. Moreover, it brings clients closer to realizing their dream and having a pleasant experience in jointly working towards the shared vision. All in all, I hope to do make a small contribution to the world in which I geared to work in, be it with reputable architect firms or later perhaps starting my own company in project management.

There are a few people that have been of special help to me writing this thesis which I would like to express my gratitude for in this way. First, both my tutors: Herman van de Putte and Paul Chan, who not only managed to trigger me in an academical way, but shared the enthusiasm in this topic, which has been a strong driver for me in this process. I would also like to devote a word of thanks to Geraldine Dijk who helped me as test case for constructing architect interview questions. Also, I would like to thank by fellow students, for the social support and reflection.

I felt most privileged and have much appreciated the time and constructive conversations with the architects and clients in my research. By being able to visit two of the architects and seeing their practical work my motivation to work on this thesis report only grew. I sincerely enjoyed visiting them as well. Furthermore, I thanks my parents, who functioned as an objective mirror to what I was doing and provided me some motivation when needed. Lastly, I want to express my gratitude to my girlfriend with her sharp eye, academic experience, and unconditional support.

Introduction

Situation

What is known

Researchers have studied the interactions between architects and clients for many years (Cuff, 1991). The quality of relationship between these actors is deemed crucial for efficiency and success (Serrador & Turner, 2015). Research from Williams et al. (2015) even showed that this relationship quality was the most influential factor in predicting satisfaction. Yet, the concept itself is often neglected in literature. A more often used concept, that overlaps the concept of relationship quality in aspects like personal interaction and problems solving, is service quality (Keating et al., 2003). Likewise, the concept of service quality is related to customer satisfaction. This customer satisfaction is known to be a key factor in gaining a competitive advantage, particularly through customer loyalty, word-of-mouth recommendations, and repeat business (Cronin & Taylor, 1992). Therefore, especially in the architectural field wherein referrals and repeat jobs are common (Ueltschy et al., 2007), it has become crucial for architects to comprehend how clients feel about the services they receive. However, Forsythe (2008) argues the concept of service quality is still infant. On top of that Oluwatayo et al. (2014) explain that apart from public clients there is very little research done about satisfaction in the field of first-time private clients.

Problem

The recent systematic literature review by Mertens et al. (2022) acknowledge that architects and clients have problematic relationships. According to Angral (2019) there appears to be an increasing distance between architects and their clients. He further argues that the architecture profession is in danger due to the predicament of clients in private residential projects. For example, architects are being blamed to have an inability in assessing client requirements (Kärnä, 2014). Furthermore Frimpong & Dansoh (2018) found that clients perceive architects as being arrogant, inaccessible, and unapproachable. So, clients feel not accommodated and are unsatisfied the architectural services.

Trends

On top of these traits, trends in society might affect the problematic situation even further. For example, the increased competition between architects due to the globalization and digitalization. As Angral (2019) explains other professionals have also captured a market share of what used to be the field of architects (e.g. engineers, technical designers, project managers). The technological advancements as just mentioned with digitalization might also enable contribute to solution. For example, clients can share experiences, and even increases their knowledge about architectural projects (Oluwatayo et al., 2014). So instead of only impacting negatively these trends might also give solutions to the problem. As, since with an increasing world population and the overall housing shortage, the demand for architects remains.

Relevance

Architects do add value to construction projects. Mertens et al. (2022) argues architects are unique in the combination of being creative, regulated by professional bodies and service providers all at once. As explained by Brown et al. (2010) because architect' services are often employed from concept up to until completion, they embody a special knowledge base that no one else can offer,

and as Angral (2019) found, clients are willing to pay for that. Therefore, it is relevant to search for a solution to this problematic situation that seems to be at hand.

Solutions

As described in the first paragraph of this chapter solutions might be found in ways that enable customers to be more involved in the design. Siva & London (2012) advocate for client learning during the process and indicate the significance of the social environments where the design is done, to be influencing the behaviour of both client and architect. Latortue et al. (2015) explains that including users in the design is beneficial for having more accurate client requirements, no costly mediators, and an improved level of the system. According to Mertens et al. (2022) some authors even suggest architects should cooperate with sociologists and psychologists. Others ply for a bottom-up approach, where architects take an unbiased perspective and try to understand the client perspective. With this approach the role of the architect would be to facilitate the process, while clients themselves might not be able to draw or understand. According to Mertens et al. (2022, p3): *"expertise, beliefs, expectations and motivations need to be shared and adjusted on both sides at that time in order to create a shared common ground throughout all the stages."* All this might imply that customizations (adjustments to the needs of the client) could help.

Complication

Service quality

The ways in which service quality can be improved is undecided upon. In research from Kasiri et al. (2017) the disparity in academical research about how service quality can be improved becomes clear, as they discuss both research that found a positive relationship between customization and service quality as well as research that indicated that standardisation would increase service quality. It might be that this depends on the type of project, architect, and client. Mertens (2022) continues by stating that some alternative approaches for interaction with users have been explored. Yet, he argued a balance between the architects' desire to keep the lead, and the clients' desire to be involved, is not found. There appears to be no consensus about the effect and the extent to which user or client participation is allowed thus far. Other, novel, and minor research from Saleh et al. (2016) was done to support the user involvement and create understanding around the use of computer visual materials. They argue that new media might offer opportunities for different presentation and communication materials, and platforms to improve service quality.

Knowledge gap

Emmitt (1999) explains that the lack of literature in this specialized area of architectural projects is due to four factors. First, he mentions that firms have reluctant directors, while contributing to this research might help competitors. Second the field is specialized and therefore it has little relevance to others. Third, there is a lack of education on client involvement. Fourth the field has no advocate and lastly the problem is not defined properly. Furthermore, (Oluwatayo et al., 2014) states that there is little known about how architects can satisfy first time clients in particular. Nowadays architects therefore adopt a trial-and-error process. In particular limited research is conducted about the link between customization and service quality (Kasiri et al., 2017).

Question

Main question

To be able to improve the situation first an oversight of the problem is needed. After that, a more strategic approach can be constructed with recommendations. One that is taking the nature of clients into account. This thesis will therefore put a renewed focus on both the perspective of architects and their clients, by looking at how the interactions between clients and architects can be customized. The main question therefore is: *"(How) can customized interactions influence perceived service quality, in the case of private residential projects?"* The questions and their relationships are depicted in the conceptual framework, as shown in figure 1.

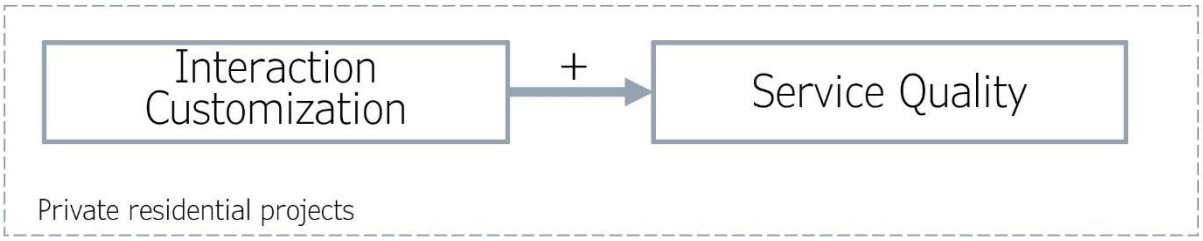


FIGURE 1: CONCEPTUAL FRAMEWORK; OWN FIGURE

To give answer to this main question, the thesis will investigate the following sub questions related to the context and concepts of the main question:

- SQ0: What are root causes the of problematic relationships between architects and clients in private residential projects?
- SQ1: What is the standard interactions procedure?
- SQ2: How is being customized?
- SQ3: What is the service quality, what elements influenced it, and how is it being evaluated?

By both analyzing existing literature in the theory chapter, and data collection via surveys and interviews answers to these sub questions are found. The interviews that will be held amongst clients and architects both include reflection on the recent services as well as recommendations and limitations on future improvements. The structure of the interviews is further explained in the methods chapter. Based on the analysis of the interviews (in the chapter Analysis) the amount of customization and service quality can be compared. Also, the individual units are reviewed for the influence from Customized Interactions (CI) on Service Quality (SQ) in detail. Furthermore, other relevant elements of influence on service quality are summarized. After that these insights will be tested against the existing literature in the discussion. After the conclusion a few recommendations are done on how both architects and clients could improve the service to contribute to a solution to their troublesome relationships as it exist nowadays.

Theory

Theoretical framework

To structure the theory in the research field, the thesis uses a theoretical framework as shown in figure 2. First this chapter explains the context of private residential projects and the problem causes of the problematic relationship between architects and clients. The second chapter explains concept around interaction, touching upon the typology of interactions, interaction process analysis and communication types. The third chapter of customization will reflect on the limited literature available on this topic for the private residential projects. Also, it will present a framework for the analysis of this research. In the fourth and last theory chapter the service quality and the models of Parasuraman et al. (1985) and Forsythe (2008), are discussed. These models were also adapted for this research to create a renewed and improved framework. The theory chapter ends with an integrative and combined framework for comparing customized interaction with service quality.

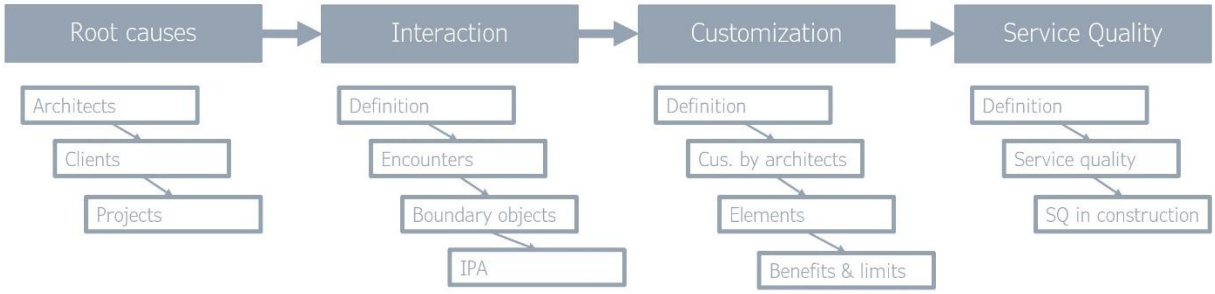


FIGURE 2: THEORETICAL FRAMEWORK; OWN WORK

Root causes

Nowadays in the practice of housing development, the relationship between architects and end-users can be very problematic (Mertens et al., 2022). Therefore, architects are marginalised. Angral (2019) argues that the predicament of the architect's profession is because of their distance to clients. According to Kärnä (2014) the construction industry has lagged because of incapacity to assess customer requirements. Frimpong & Dansoh (2018) go even further by stating that clients see architects as arrogant, inaccessible, and unapproachable. Why is this relationship between clients and architects so problematic, what are the root causes of this problematic relationship?

To start, many authors refer to the nature of these projects and its participants for the cause of problems. First the projects themselves are discussed. Siva & London (2012) mention that in these projects the participants that are brought together are often complete strangers for one another who might have differing worldviews and values. As Emmitt (1999) explains these projects are often one-time off, complex and bespoke projects that embed challenges on their own. Also, the high level of uncertainty causes project requirements to be developed, negotiated and challenged all the time (Barett & Stanley, 1999; London & Chen, 2004). Therefore, the nature of projects on its own is increases the chance for problems to arise.

Secondly, the nature of clients contributes to the problematic relationship. For clients, these projects often are the biggest expense of their life, therefore they tend to me emotionally involved. As clients that purchase for personal need are often one-time users of an architect, they lack knowledge and experience (Forsythe, 2008). For laypeople the role of architects itself might even be unclear (Mertens et al., 2022). Clients are often unaware of the process itself, which is iterative and open ended (Royal Institute of British Architects, 1995). Furthermore, Angral (2019) explains that the disparity in language and terminology of clients and architects can add to the problem. In the evaluation of the projects, clients and architects also differ, as inexperienced customers who are

not able to assess the construction quality, often rely on service quality to assess the project (Forsythe, 2008). This also indicates that compared to other types of projects, service quality is deemed even more important.

Thirdly the nature of architects has contributed to the problem. In literature the most appearing opinion is that architects do not know how to communicate and manage. As Emmitt (2014) explains, the management perspective is odd to the design-oriented profession and its creative endeavours. Furthermore: *Architects who are often charged with the role of coordinating the interests of different participants rarely refer to formalized procedures, textbooks or guidelines to seek appropriate management tools or techniques."* (Cuff, 1991, p.254). Architects often adopt a trial-and-error process (Oluwatayo et al., 2014). London et al. (2005) further explain that this ad hoc approach results in a wide variety of client satisfactions. Also, architects rely mostly on visual means for communication, while traditional managers rely on interpersonal communication (Siva & London, 2012).

Apart from architects themselves, the fee structure they use might not motivate both the clients and architects. As Angral (2019) explains with a percentage-based fee structure architects are not motivated to do additional work. A task-based fee structure as he proposes, might offer solutions, and motivates clients to approach architects again, since it might be clearer as to what they pay the architect for. Furthermore, as Mertens et al. (2022) wrote, users' input is usually limited to functional and structural aspects, while embodied knowledge is rarely collected by architects. He explains that as a result communication gaps occur, that lead to misunderstanding and frustration which on its own might accelerates the failure of the relationship. Overall Angral (2019) summarizes nicely by stating on p.69:*" there is an intrinsic relationship between an architect's inability and a client's failure to strike an optimum balance amongst quality cost and time."* Private residential projects are thus faced with many unfavoured circumstances, that require close monitoring and if needed appropriate action & tools.

Interaction

Now that the context of the problem is clearer, the architectural services can be analyzed. As Oluwatayo et al. (2014) state architectural services are marked by interactions. Interactions are deemed critical for the success of the service experience by clients (Devlin & Dong, 1994). Therefore, this chapter will analyze the different types of interactions that are described in literature. First a definition of interactions is described, where-after the architectural perspective on service (interactions) is described. Furthermore, the different types of encounters in location and sequence are set apart. After that boundary objects are discussed. Lastly the different types of interaction statements as conceptualized in the interaction process analysis are discussed.

Definition

What is interaction in the design? Mertens et al. (2022) use the definition of social interaction by Little (2016) to describe the phenomenon on p.2: *"Social interaction is the process of reciprocal influence exercised by individuals over one another during social encounters".* With reciprocal a two-directional influence is meant. Nowadays, the social encounter is often mediated by virtual means of communication.

Architectural service

As was found by Mertens et al. (2022) the role that architect (and users) must take in the process is unagreed on. As they noted in their systematic literature review some authors ply for customization, while others highlight the limitations and issues, and see benefits in standardisation.

To comprehend how service providers can customize their services, it is necessary to understand how they operate and how they deliver their services. First the model of Fosstenløkken et al. (2003) (figure 3) is depicted to show how professional service firms create value. They distinguish the strategy, core business and resources (from top to bottom) and a few processes that might influence them. Fosstenløkken et al. (2003) also cite Løwendahl et al. (2001, p.862) when explaining the traits of these professional service firms. These are the following: *Highly knowledge intensive. Involve a high degree of customization. Involve a high degree of discretionary effort and personal judgement. Typically requires substantial interaction with the client. Are delivered within the constraints of professional norms of conduct.*

Architects distinguish themselves from other professional service firms by providing services through a series of interaction and education for the clients as well. As Emmitt (1999) explains another key trait of an architecture firm is that they are mostly concerned with satisfying clients, in thus far that they are notorious for managing their own business ineffective. This is striking since, the problematic relationship between architects and clients is partially due to the lack of acknowledgement of clients.

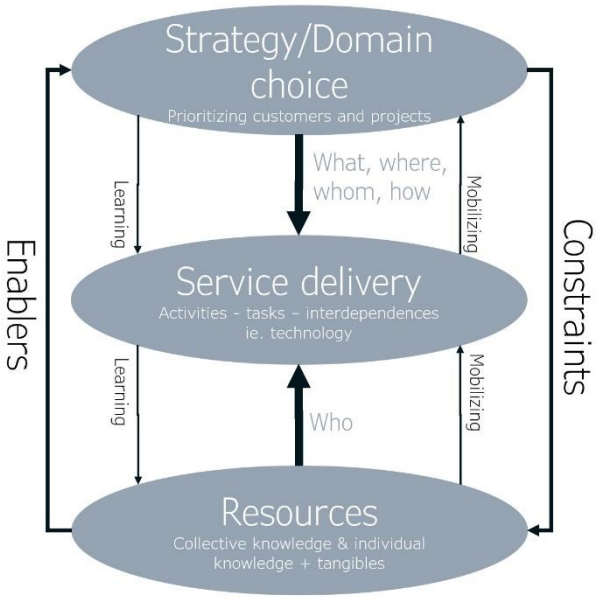


FIGURE 3; SERVICE DELIVERY;FOSSTENLOKKEN ET AL. (2003)

Cuff (1991) agrees with this duality and adds four other dualities in architectural practices. The first duality she sets apart counterposes the collective versus the individual, as architects are autonomous artists, that eventually must work together in a team or firm. The second duality counterposes the management versus the design perspective, while a limited budget and time might limit creative freedom. The third duality is about decision-making structure. It counterposes a decision making based on a design (which is more about using the situation to make decisions) versus making decisions in a more business top-down structure. Architects like to design and try out different options, but eventually they must decide due to approaching deadlines. The last duality is about whether architectural teams should consist of general architects or a whole team of different specialists. With all these dualities it is no surprise that Arboleda, (2020) also argues that architects often have challenges in maintaining the balance in their daily work. Angral (2019) adds to this by stating that architects are often unable to reconcile societal values with the norms of the profession.

Oluwatayo et al. (2014) explain that the daily operations vary from the meeting of requirements, education of the client and scheduling and budgeting aspects. Architects have found multiple ways to cope with all the dualities and tasks that are just described. Mertens et al. (2022) found that due to their education and tradition architects have the tendency to be peer-oriented rather than client-oriented. This can also be seen in their tools of communication as they also argue that most architects don't go further than conversational interactions to understand client needs.

Furthermore, they explain that this way of communication, while used frequently, might not be the best way of interacting, *"these exchanges do not make users data sufficiently tangible and significant and therefore they are not the most appropriate way for users to efficiently leverage their particular expertise or to actively engage into the design processes."* (Mertens et al., 2022, para 4.3.1)

As Angral (2019) explained the fee structure for architects is often percentage based. Usually it involves a percentage of the total construction costs, from which this percentage a relatively big share is being invoiced at the start. Angral (2019) argues that this might be a reason for clients to refrain from cooperating. This might also explain why the relationship with clients may start in a competitive fashion. However, it must be noted that the payment structure is different per architect. Considering the design itself, as Huang & Wang (2012) explained, it evolves around the problem solving of well-defined, ill-defined or wicked problems. Since well-defined problems can be solved and wicked problems must be broken down, they argue that ill-defined problems form the daily work for designers.

Encounters

Mertens et al. (2022) explain that although the encounters from architects and clients used to be face-to-face, in today's society they are often technologically mediated. Oak (2011) argues that face-to-face talk is important for good communication. Although they see new digital supporting digital technologies, and traditional tools, like sketches and models as significant aspects in designing, they argue that collaborative practice with architect and client face-to-face talk remains essential. They further conceptualize the talk about design (and the to be designed object) as a set of negations where-in creativity and constraints are being balanced.

Yet, what type of encounters are there? A useful typology of encounters was made by den Otter & Emmitt (2007) as in figure 4, they make a distinction based on the time and location of the encounter. Based on the social interaction definition only the interactions represented in the left colum fall under the definition of (social) interaction. The other typologies will be referred to as secondary communication. Another concept that is related to communication (c.q. interaction) is trust. Mertens et al. (2022) argues trust is key for communication. Despite having a shared purpose in developing a business connection, architects and clients typically have little to no interaction outside of collaborative work meetings. This (lack of) dynamic interaction affects how they act, think, behave, and feel throughout the design process. He explains that the complex balance between a degree of autonomy, letting go and trust is the basis of a relationship between an architect and his client. As is being explained further (Mertens et al., 2022) literature lacks however, the tools to accommodate this connection.

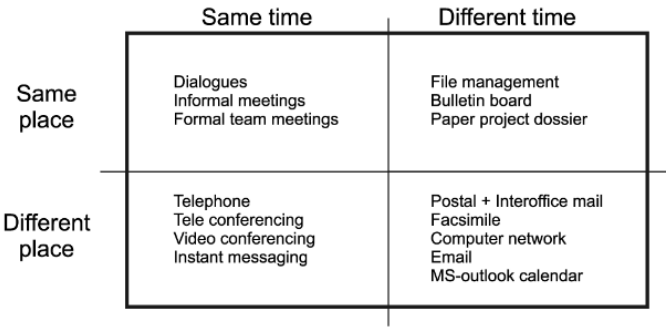


FIGURE 4: METHODS OF INTERACTION; OTTER & EMMITT, 2007

However, new technologies as augmented reality (or virtual reality) could be an impactful method to enhance communication in the iterative process of a design project (Erzetic et al., 2019). Another tool that was addressed by Angral (2019) was design conversation, where-in the architects tries to explore the client requirements all along the project life cycle. They believe this is the appropriate way of designing since by innovating and improvising within limitations and with scarce

resources will ultimately lead to the best solution. This can be challenging as the requirements will inevitably change during the lifetime of the project.

Boundary objects

A notable concept in design communication is the concept of boundary objects. As explained by Pareto et al. (2010): *Boundary objects are shared artefacts that maintain integrity across a project's intersecting social worlds.* In other words, they are objects that can be understood by different people regardless of their background. Concepts that are familiar to both actors. It is common knowledge to create common understanding. They can be used to explain the design to "green" clients. Latortue et al. (2015) distinguished four types of boundary objects. Repositories, ideal types, coincident boundaries, and standardized forms.

Analyzing Interactions

How can we than analyze the content interactions? Oak (2011) introduces the concept of symbolic interactionism (SI). This concept encompasses the construction, communication and sharing of knowledge. So, it is about how we communicate. She explains that in design two concepts of SI can be used. The first is that of the language we use. Second is about the roles and attitudes people can take (constraining or enabling). These insights can help us understand how design is communicated and might in turn help us understand the service quality that can be influenced by this.

A more established conceptualisation of interactions is the Interaction Process Analysis (IPA), as also used by (Gorse et al., 2000). Based on this conceptualisation four main types of interaction (statements) are distinguished (table 1). Goals of interactions or communications could for example be to build or recover relationships, or to ask or give answer about task cq. design related aspects. An interesting comparison with the "Johari Window" as described by Winch (2010) can be made. As shown in figure 5, information communication in design can come from architect side (disclosure) or client side (feedback). Furthermore, it can come from outside (certainty). The disclosure of information by architects can be compared with giving answers (4,5,6 from the IPA model). The feedback can be seen as questions from the architect (7,8,9). Yet in practice design conversation will probably embed a combination of multiple goals simoultaneously.

Whilst this research does not investigate individual conversations, as for which this interaction analysis is most appropriate, the interaction process analysis will not be used as analysis for the case studies. Yet, the analyse method could be very well considered to understand the type of interactions, in further research. Also, its conceptualization is to be considered important background knowledge when researching interactions.

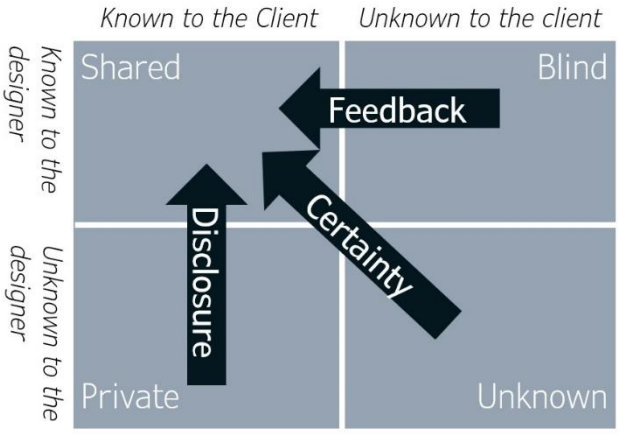


FIGURE 5: JOHARI WINDOW; ADAPTED FROM WINCH, 2010

(1)	SHOWS SOLIDARITY – raises others status, gives help, reward	Social emotional area: Positive Reactions
(2)	SHOWS TENSION RELEASE – jokes, laughs, shows satisfaction.	
(3)	AGREES – shows passive acceptance, understands, concurs, complies.	
(4)	GIVES SUGGESTION – direction, implying, autonomy for others	Task Area: Attempted answers
(5)	GIVES OPINION – evaluation, analysis, express feeling wish	
(6)	GIVES ORIENTATION – information, repeats, clarifies, confirms	
(7)	ASKS FOR ORIENTATION – information, repetition, confirmation.	Task Area: Questions
(8)	ASKS FOR OPINION –evaluation, analysis, expression of feeling	
(9)	ASKS FOR SUGGESTION – direction, possible ways of action	
(10)	DISAGREES – shows passive rejection, formality, withholds help.	Social emotional area: Negative reactions
(11)	SHOWS TENSION – asks for help, withdraws out of field	
(12)	SHOWS ANTAGONISM – deflates others status, defends or asserts self	

TABLE 1: ADAPTED FROM GORSE ET AL., 2000

Customization

Since clients feel not heard by architects, it is worthwhile investigating whether customizations can help to improve the service quality of architectural services.

The dilemma between customization and standardisation has recently been address by (Kasiri et al., 2017). They argue that this dilemma is not fully explored, and no conclusive research was done. Therefore, they researched the relationship between customization & standardisation with service quality. They thereby continued the work from (Grönroos, 1993). Their renewed research found that customization and standardisation can both help improving service quality simultaneously (figure 6). They argue that the routes by which both concepts lead to satisfaction are different. It could be argued that in the construction industry with high costs and high inefficiency, due to the risks and uncertainties, the motivation to innovate and customize might be low. Yet, there is insufficient literature available today to construct an argument on this topic.

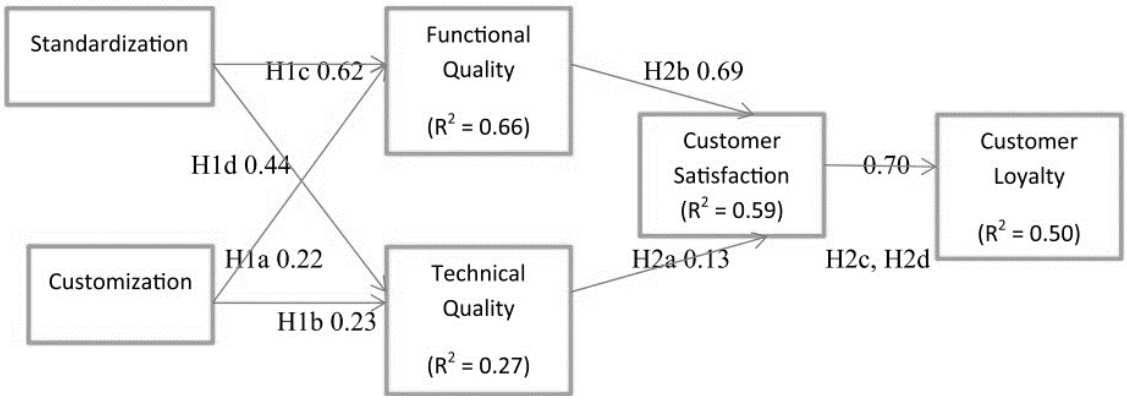


FIGURE 6: RELATIONSHIPS BETWEEN CUSTOMIZATION & STANDARDIZATION WITH SERVICE QUALITY; KASIRI ET AL. 2017

When reflecting their model to the construction industry one can quickly understand that the technical quality (the design/product), is something that is being customized in architecture all the time. Yet, in the projects with private clients and close interactions, the functional quality and thus how the service was provided might be even more relevant to research further. This research will do so.

The definition for customization in this research will be as follows: ***Customization is an adjustment to the needs of the clients, as deviation from the "standard" procedure at the case architect.*** Although the standard procedure for every architect is somewhat different, this definition should help the researcher to be able to compare the architects better. Also, a proper definition of the needs of the clients is required to be able to assess whether an adjustment can be called a customization or not.

Benefit of customization

From a business perspective Ansari & Mela (2003) found, customized services attract customers and foster loyalty. They go even further by explaining that the personalization and targeting of service can translate into increased cashflows and enhanced profitability. However, they note that due to implementational challenges and insufficient information it might be difficult to implement. Siva & London (2012) argue that a service might also contribute to the client's enjoyment.

Methods of customization

How is being customized? A definition (Oxford learner dictionary, 2023) is: *to make or change something to suit the needs of the owner.* Therefore, the appropriate way of customizing all depends on the clients' needs.

A first distinction in types of customizations can be seen when looking back at figure 6. Based on this figure one could understand that some customizations are more focussed on the technical quality (what is being delivered e.g. the design or task based elements), while other customizations might be more focused on how the service is delivered, so who is involved and to what extent, what location is used, when is being interacted. It could be argued however that in reality most interaction customization include both and therefore are mixed or hybrid.

As discussed previously by Siva & London (2012) a method of customization is the participation of clients in the design. Participation in design is not something new. The model of Latortue et al. (2015)(figure 7) based on Wulz (1986) & Wandersman (1981) depicts the degrees of involvement of clients in the design. For the conceptualization and analysis in this research the typology of Wulz (1986) was used.

Another way to customize is trough digitalization. As Ansari & Mela (2003) mention the advent of internet has enabled marketeers to personalize communications. Furthermore, they argue that by combining optimization and choice models specialised services for example catalogues with unique designs, can be created. Also, the user interface (UI) of this communication (when digitally) can offer opportunities for customization. As Erzetic et al. (2019) explain the development of a UI might improve the precision and thoroughness with which clients can satisfy their needs.

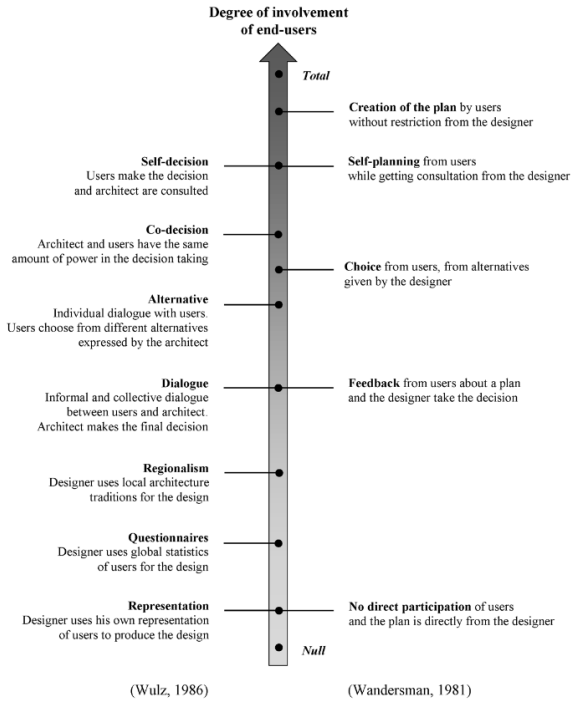


FIGURE 7; DEGREES OF INVOLVEMENT OF END-USERS

Furthermore, Saleh et al. (2016) argued that the use of different types of computer visual materials might offer opportunities for customization as well. In their article they set apart five different dimensions which architects use to communicate design (p.2512). The first dimension to communicate is one dimension (1D) such as points and text. The second dimension to communicate is two dimensional (2D) such as plans, maps, sections and elevations. The third dimension to communicate is two and a half dimensional (2.5D) which show three spatial dimensions projected on 2D such as perspective and axonometric or isometric projections. The fourth dimension is three dimensional (3D) which could be static (physical or digital) or dynamic (digital) models. The fifth dimension is four dimensional (4D) when a time component is added to 3D. In conclusion they combined these dimensions into two TVM (traditional visual material) and 3DCVM (3-dimensional computer visual material) and asked both architects and clients what they used. Moreover, this research also considered the level of detail that was used. They state that using 3d would enable the clients to read the materials better. Furthermore, they stated that the most effective use for layout design was by using a low level of detail. Despite this, it was stated that architect themselves preferred high levels of details. The authors further note that the stage of the design is important in the consideration of the level of detail that must be used. In doing so they warn that although a high level of detail in the early phases of design might help clients to relate the design, it may shift the attention to irrelevant issues and thereby cause delay. Nevertheless, the authors promote the customization of these materials and level of details amongst clients. However, they did also realize that it the time-consuming nature of such might be an obstacle to architects (Saleh et al., 2016).

Although there are much options for customizing, it is necessary to consider both the needs and the capacities of the clients, when implementing them. Forsythe (2008) suggest that with his model customer perception profiles could be created. In doing so a categorization of clients would be made according to the service quality dimensions that are most important to them. He argues further that by using this data managers could qualify clients according to their requirements and expertise, and in doing so managing them in the most appropriate way. A typology of clients might be considered. More about the nature and typology of clients will be discussed in the paragraph about service quality.

Oluwatayo et al. (2014) already has developed a strategy based on the client. They state that is recommended to intervene if the negotiation already starts in a competitive manner, so that both participants can get to know each other on a professional level. On the other hand, they recommend that in a cooperative atmosphere this should be used to get to know each other motivations. Although, this recommendation based on their own findings might not be academically widely applicable, it shows a first potential recommendation on how services can be customized.

Ahead of the existing literature this research has developed an own framework to assess whether, and in what aspects is being customized. This model, which is depicted below (table 2) includes the following potential directions of customization:

- Location of interaction. Interaction environment, with the different methods of figure 5 from Den Otter & Emmitt (2007) as starting point).
- Actors involved. Whether a team of specialists or generalist is used (as described in the dilemmas by Cuff (1991), or PM managers are included.
- The amount of involvement (based on the typology of Wulz (1986) in figure 8).
- The tools that were used (2D, 3D, 4D, use of computer visual materials and level of detail, as described by Saleh et al. (2016))
- Soft skills (adjustments in interpersonal communication)
- Other customizations (that have not been included in the model thus far).

It is argued that in architectural practice the topics of interaction and sequence of the process is not customized upon, since adjustments in these field, might impose a large burden for architects in their daily operation. Yet, more research is needed to be able to construct a statement about this. With this future research the models' dimensions and definitions can further be improved.

Customizations	Examples
Environment	Office, on site, video call, neutral ground
Actors	Architect 1, Architect 2, Intern, Project manager, Conctractors
Involvement	Representation, Questionnaires, Regionalism, Discussion, Alternative, Co-design, Self
Tools	Sketches, mock-ups, storyboards, 2D, 3D, 4D, CVM, LoD
Soft	Tone, Personality, Pro-activeness
Other	Topics, Redesign, etc.

TABLE 2: POSSIBLE CUSTOMIZATIONS

Limitations for customization

Literature also presents some research that mentions the limitations on customizations. Emmitt (1999) for example states that with a high degree of customization circumstances may be unusual and therefore normal techniques might be inappropriate. They continue that, because of the frequent face-to-face interactions with clients, it is essential to have extremely specific interpersonal skills. Latortue et al. (2015) paraphrase Champy (1997) when they talk about the risks of user participation. They argue that user participation might increase the amount of work and time, since clients are not always suitable. In turn, they argue, this might demotivate the design team. The routines and boundaries that active do have proven their use, and therefore breaking with those can jeopardize the mechanisms. Wilson et al. (1996) therefore states that all the participants (including architects) should have both motivation and knowledge about the design process. Even in 1988 Gould (1988) advocated for a special dedicated unit specialized in managing the concerns about usability to customize service.

Above all designers should maintain the lead and take an active role in user involvement (Kujala, 2003). As Cheng et al. (2006) state client satisfaction depend will be different depending on the timing and the type of clients. Therefore, strategic decisions on customisations must be taken with utmost care. Issues such as, how these strategic decisions impact client satisfaction levels and the influence of the varying project stages, have not been researched before. Therefore, they ply

for a knowledge base decision support system that help optimize such decisions. This research will provide a starting point for such a database.

Service Quality

As Forsythe (2008) argues much research has been done already to understand quality in management and production. Yet, he still acknowledges a gap in the attainment of service quality (SQ). Especially in the field of construction. To understand how the gap can be covered it is first necessary to define the concept itself.

Definition

To understand the of SQ this thesis refers to the definition of the most prominent authors in this field. (Berry et al., 1988) for example, distinguish "service quality" from "quality" by stating that service quality is conformance to "customer" specifications. They further argue that the assessment of quality is done by a comparison between the perceived and the expected quality. Service quality is related to many types of related concepts of satisfaction (Oluwatayo et al., 2014) and it is considered the antecedent of customer experience (Lemon & Verhoef, 2016). An important note to make is that service quality in construction might be different compared to other industries because in most industries production precedes service. Yet in construction, service delivery and production occur concurrently. It involves interactions, activities, and dynamic events along the process (Forsythe, 2008). The next paragraph will investigate how service quality is measured.

Areas

Parasuraman et al. (1985), still are the most cited authors when talking about service quality. They have distinguished ten key determinants of service quality, that were both identified by service providers and takers: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibility and understanding. However, in a consecutive publication (Berry et al., 1988), these determinants were combined into five areas namely: assurance, empathy, reliability, responsiveness, and tangibles. They are explained as follows: Assurance covers the ability to convey trust, confidence, courtesy, and the employee's knowledge. Empathy is defined as the amount of care and attention provided to customers. Reliability is about the accuracy and consistency in which the service is delivered. Responsiveness stands for the willingness to always help customers. Lastly, the tangibles are all the physical aspects, like appearance and equipment. Since these dimensions of service quality are very generic, Cronin & Taylor (1992) note that to understand whether these dimensions are relevant it is important to check whether these factors vary across studies. They argue relative weighing of these aspects could be differing per industry and client. Oluwatayo et al. (2014) are of the same beliefs by stating that within the construction industry, satisfaction with services is perceived in different ways. Therefore, improving service quality is contingent of the type of client. A customized service is thus deemed necessary. Now that it is clear on what areas service can be measured, we need to how they are measured.

SERVQUAL

To use these dimensions to assess the service quality, Parasuraman et al. (1985) have made their well-known service gap model (as shown in figure 8). This model conceptualizes the gaps in services based on the general process of a service delivery. The total gap between expected and perceived service (gap 5) is seen as the sum of the four other gaps. It is argued that the client already has expectations of service based on his own personal needs, word of mouth communication and previous experience beforehand that influences their experience. First, Parasuraman et al. (1985) conceptualize a gap at the start between what service is expected by the client and how this client expectations of service are perceived by the "management". A second gap can be seen in the translation of these perceptions by management into their own service quality specification. The third gap occurs when the specifications are converted into the delivery of that service itself. The fourth gap is one that can be seen as the gap between the actual service delivered and what is communicated about that service to the consumer (c.q. client). The fifth gap is the service quality itself as it is perceived by the customer and compared with his own expectations.

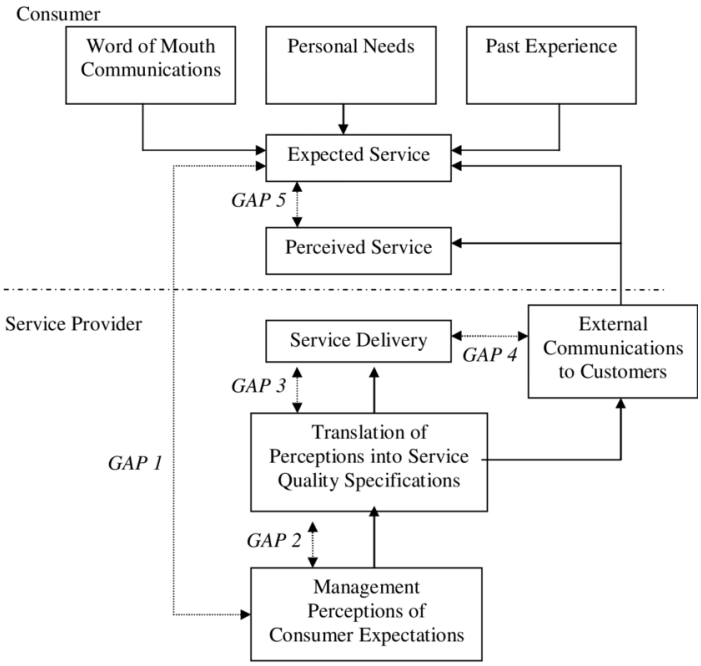


FIGURE 8: SERVQUAL; PARASURAMAN ET AL., 1985

In this model three out of the five gaps are internal with the service provider. However, it is argued that in construction or design, more frequently occurring gaps are evaluated and handled within the process. As Oluwatayo et al. (2014) explains the process of service delivery with an architect is often marked by series of interaction and education of the clients. Forsythe (2008) adds to this by explaining that customers judge the service quality during each stage, instead of doing this at the end. He continues that the evaluations of service are progressive and effected by the amount of involvement of the client in the process. Therefore, the perceived service quality is more dynamic. In response to Parasuraman et al. (1985) and by using the "problems of construction" as conceptualized by Winch et al. (1998), Forsythe (2008) has made his own model (figure 10), that is especially applicable for the field of construction.

Service quality in construction

As one can see in figure 9, Forsythe (2008) converted the model of Parasuraman et al. (1985) into a more sequential scheme, where during the occurrence of all gaps, reflections by the customer are done. So it might be that the more clients are involved into the design the more they continuously and unconsciously evaluate the service quality, since gaps occur between the different design stages: pre-design, conceptual design, spatial, technical design (as set apart by Royal Institute of British Architects (2020)). It is to be considered that with participatory design some of these gaps might even be solved during the process. One could then argue that in these processes

the service quality is mostly based on relationship quality, as it is not about the gaps that occur, but more about the capability and willingness to solve those.

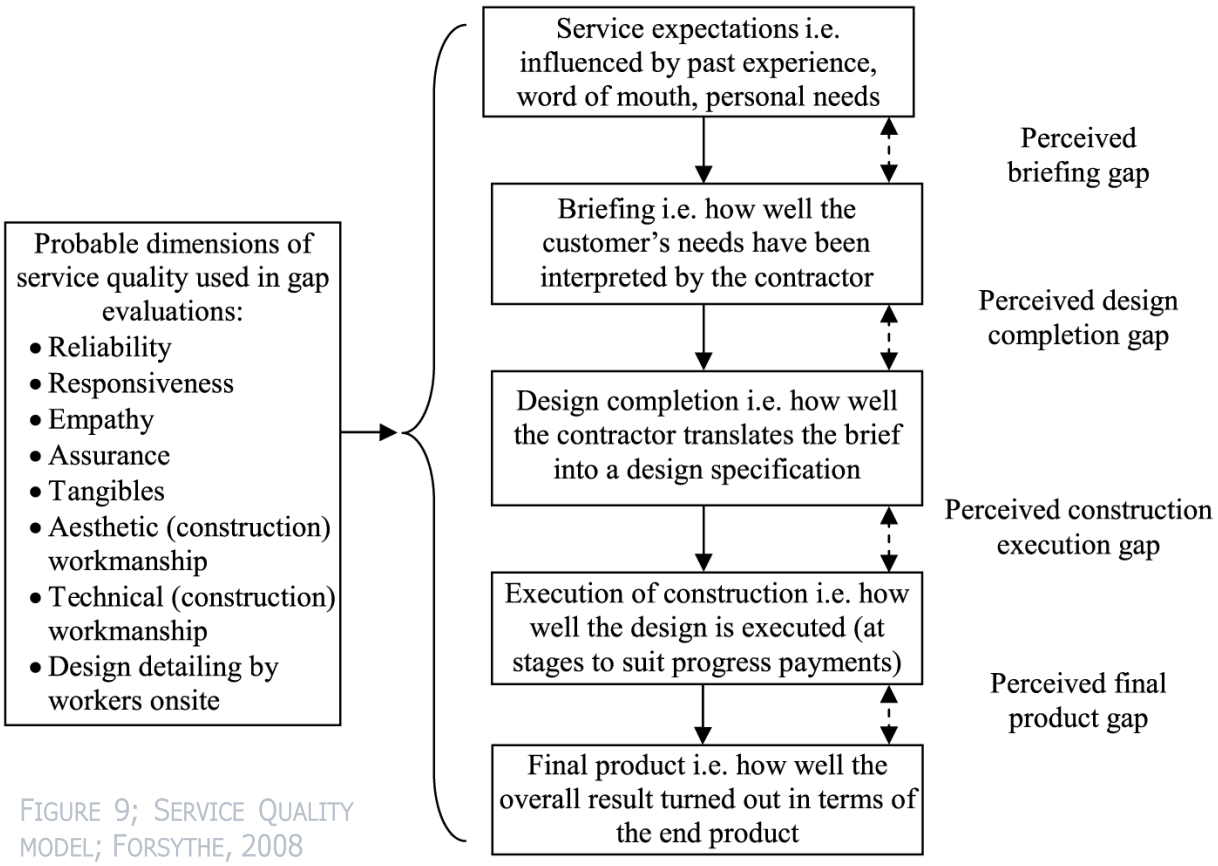


FIGURE 9; SERVICE QUALITY MODEL; FORSYTHE, 2008

Detailed model service quality in private residential projects

To further detail the model of Forsythe (2008) this research, converted both the models into a third model. This model combined the different phases from Forsythe (2008) with the detailed description (including expectations and perceptions) of the Parasuraman et al. model (1985). With this model an even closer representation of service quality assessment in private residential projects is attempted to be made. This figure (10) also embedded the eight project phases as explained by RIBA (2020), as it is argued that the service gap in a particular phase might add to the expectations for the next phase. The same dimensions as Forsythe can be used. The service quality gaps that can be defined by this model will be used as an indicator for perceived service quality in the analysis of this research. phases. The model used for analysis is a simplified version with only four phases.

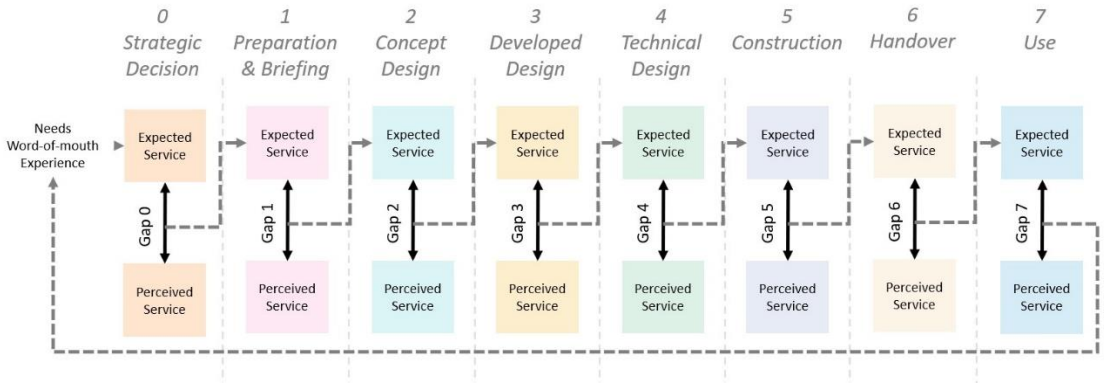


FIGURE 10: OWN FIGURE, ADOPTED FROM PARASURAMAN ET AL. (1985), FORSYTHE (2008) & RIBA (2020)

Perception

Since service quality is measured by an evaluation between what was expected and what was received, it is useful to know how people perceive. First, to understand how clients perceive service quality it is relevant to distinguish the different types of clients. In literature the experience of the client is seen as a determining factor for how people experience the service, this will be discussed in the upcoming part. Furthermore, this chapter will analyze what these types of client need, what they are generally satisfied with. In special the habitus shock phenomenon will be discussed since it is said to be playing a crucial part in the perception of clients in residential projects. Lastly the concept of client learning (to overcome this habitus shock (Siva & London, 2012)) is discussed.

Experience

So first, it is necessary to understand what types of clients are distinguished in literature. Virtually all research about service to clients in construction point out that the amount of experience or knowledge is a determining factor in how clients perceive. For example, the knowledge about statutory requirements as Oluwatayo et al. (2014) explains, may be higher with experienced clients (as compared to first-time clients). This is also the case with the range of services the architect can offer. First-time clients might be not having this kind of knowledge and therefore need to be educated for them to enjoy the process, they argue. Furthermore as Saleh et al. (2016) found non-professional users might have difficulties in understanding 3d drawing and the spatial relationships depicted in them. They even argue that 3d direct modeling would be most appropriate for these types of clients. It can be argued that this would also be the case with inexperienced first-time clients. However, another finding of their research was that some architects still prefer 2d over 3d because of its ease of use, the scaling options, and better ability to have a sense of distance. Therefore, the conclusion that came out of their research was that the clients' ability to read (traditional and, or computerized drawings) is the key factor for the level of participation that should be used (Saleh et al., 2016). Next, as Siva & London (2012) argues, inexperienced clients themselves may feel incompetent, when confronted in the new environment with different norms and values. In the paragraph about the habitus shock this principle is discussed further. What is the knowledge that clients have? Mertens et al. (2022) cited the results of (Luck & McDonnell, 2006) which showed that the knowledge of users that was used in design conversations was most frequently the naming of functional and structural elements. Mertens et al. (2022) did however, also found literature (Schwaiger et al., 2019) that distinguishes a category of client that have specific skills. They argue that via enlightened conversations, the architect can utilize these skills.

Needs

What do clients themselves require? Kamara et al. (2002) defined three categories of requirements that would lead to the satisfaction of clients: Basic needs, articulated needs and exiting needs. For the process itself, Mertens et al. (2022) found several studies that indicated that clients want to be an active actor in the design process themselves. They argue while clients, with knowledge of their own behavior and habits might be aware of their own problems and therefore even have the solutions for them. Since these types of better-informed clients also expect to have a say, they engage in the process by making radical suggestions, changes, and decisions.

Satisfaction

What are clients satisfied with? Oluwatayo et al. (2014) start, by stating that client satisfaction is determined by the quality of architectural services as determined by the perception of the client himself. Chan et al. (2004) investigated the determinants of client satisfaction in both finished and unfinished projects. They conceptualized different concepts that may add to the satisfaction of clients (as depicted in figure 11) and the relationship quality was found to be strongest correlated with client satisfaction (.38 for finished projects, .29 in unfinished projects). These results are in line with Cheng et al. (2006) since they consider the effective communications (together with their service providers) as the most important factor determining satisfaction.

When do clients evaluate their services? Forsythe (2008) argues that customers will begin evaluating the quality of the services they receive at the beginning of the process rather than at the finish. As a result, customers' assessments of the quality of the services they receive are evolving and influenced by their level of participation along the process.

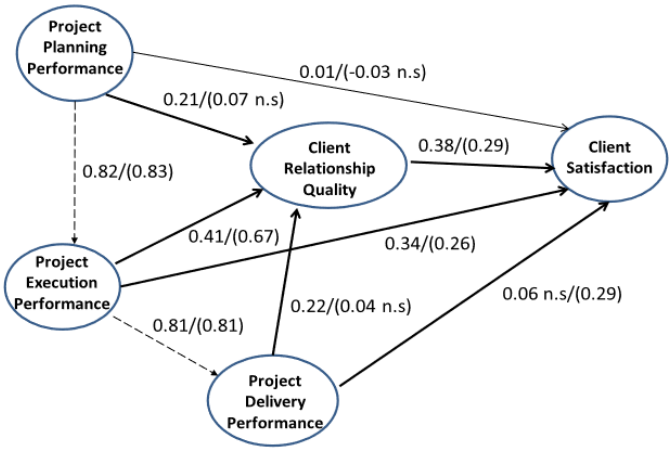


FIGURE 11: FACTORS CONTRIBUTING TO CLIENT SATISFACTION

When considering the aspects that clients are unsatisfied about Angral (2019) describes a discrepancy between the desired and perceived level of communication and collaboration. This is crucial since Cheng et al. (2006) explained this was one of the most determining factors for satisfaction. Furthermore, Mertens et al. (2022) explain most clients experience discomfort in the early phases of the process since they are confronted with their own lack of knowledge. Royal Institute of British Architects (2015) found that clients felt let down, as they mention that it was uncommon for clients to find architects that listen properly to understand their clients. Another factor contributing to dissatisfaction of clients is unrealistic the setting of targets and budgets. Macomber et al. (2007) argue that if architect do not use target values this might frustrate the client expectations. Finally, Luck & McDonnel found (2006) found that lack of acknowledgement of the users expertise, lack of emotional communication (Shao & Nagai, 2018) and fees (without guarantees for results), may add up to dissatisfied clients.

Habitus shock

Most clients in construction are often experiencing problems in understanding the language and dimensions. These clients are unfamiliar with the architectural culture, which might result in them experiencing a lack of grip on the project (Mertens et al., 2022). This phenomena of experiencing stress, confusion, and frustration due to the confrontation with an unfamiliar (architectural) culture, is being referred to as the Habitus Shock (Siva & London, 2012). Although, the initial habitus shock causes feelings of stress confusion and frustration and thereby potentially adding to the negative experience of clients, research found this shock might also contribute to the process of client learning. As clients try to cope with this shock, they establish a so called “support system”. This being the learning from others (often the architect) that will train the client in a certain way. It was found that the negative feelings related to the habitus shock decreased over

time, due to this learning. It is further argued that this support system can even contribute to the enjoyment of clients in understanding their later experiences in the process (Mertens et al., 2022).

Client learning

So, in coping with the habitus shock client learning is crucial. As Mertens et al. (2022) argue, the process of learning helps the client understand the competency of architects, which in turn adds to the shared understanding. They further argue that via this increased understanding, shared language and values help them appreciate similar things. Furthermore, when the relationship has achieved this stage, the architect is able to introduce new designs and concepts. In doing so the design evolves from a process where designing is done for the users, it is done with them. Siva & London (2012) state the architects have a supportive role in the client's journey to learn new skills. Furthermore, their study showed that successful relationships were characterized by this type of learning. As Saleh et al. (2016) argue, a special role in this can be executed by the role of visual material. They argue that the choice for these materials are related with the design phase.

Concluding theoretical framework

To finalize the literature discussion above, the model for customization & (simplified version) of service quality model are combined into a summarizing figure. This figure is also used to analyze the data from the surveys and interviews that were conducted. These methods are further discussed in the next chapter.

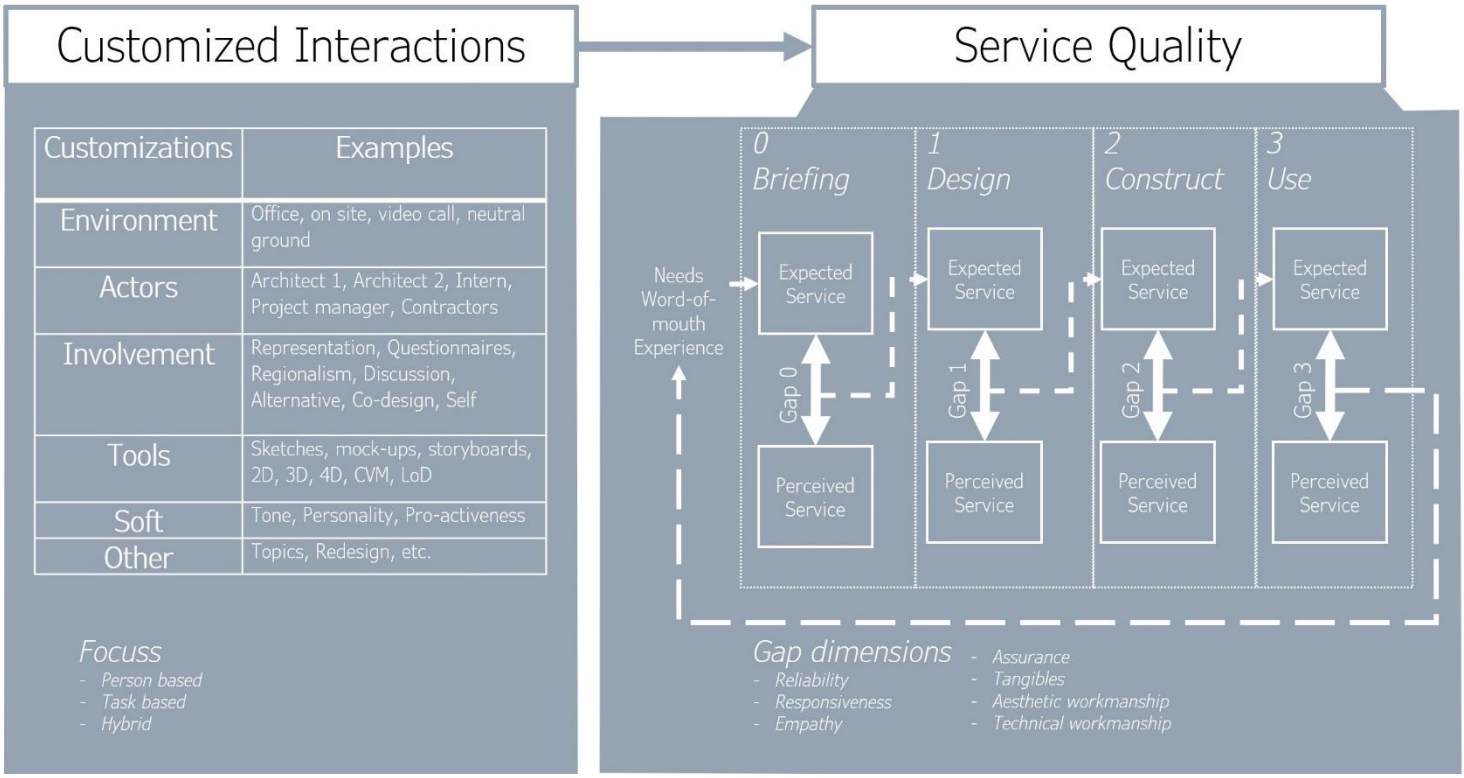


FIGURE 12: THEORETIC FRAMEWORK; OWN WORK

Methods

Questions

To be able to find an answer on the main question: *"(How) can customized interactions influence perceived service quality, in the case of private residential projects?"* the following sub questions were answered via case studies:

- *SQ1: What is the standard interactions procedure?*
- *SQ2: How is being customized?*
- *SQ3: What is the service quality, what elements influenced it, and how is it being evaluated?*

Methods

Since the field of research is novice, under researched and the problem definition is somewhat undefined, explorative case studies on recent projects were done. The usage of case studies is common for novice research fields (Lemon & Verhoef, 2016). As, as one can see in figure 13, Yin (2003) distinguished four types of case studies. Since this research involves both multiple cases and multiple embedded units of analysis (interactions, customizations & service quality), the type 4 design was adopted for this research. A combination of (introducing) project surveys and qualitative, semi-structured, interviews with both project architects and clients, were used in these case studies to collect the data. The different methods also had the goal of triangulating the data. Together with the insights from the literature review as described before an answer to the main questions were given. The relationships between (sub questions and methods is also depicted in figure 14)

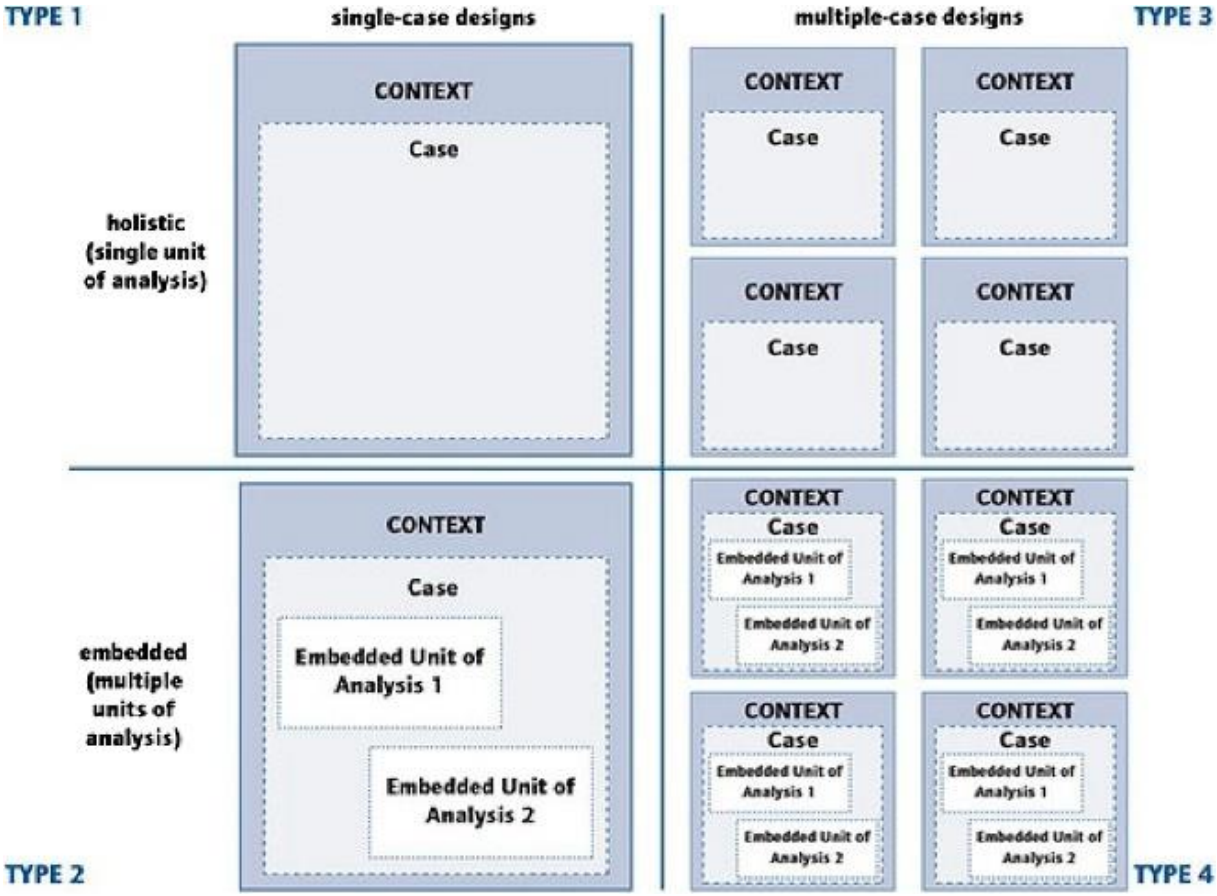


FIGURE 13: BASIC TYPES OF DESIGN FOR CASE STUDIES; YIN, 2003

To give answer to the first sub question, all methods were used (literature, survey, interviews). However, the main methods here were both the survey and the interview with the architect. It was argued that the survey provided a basis for the interview in which the elements of the survey were discussed and confirmed.

The second question was answered by a combination of both the architect and the client interviews. This was needed, to be able to define whether an adjustment in service is to be called a customization of both statements from architects and clients are needed. The architect must make a change from what his "standard" procedure would, while the client needed to "show" that this adjustment was done to better meet their needs.

The third question was mainly answered by the client interviews.

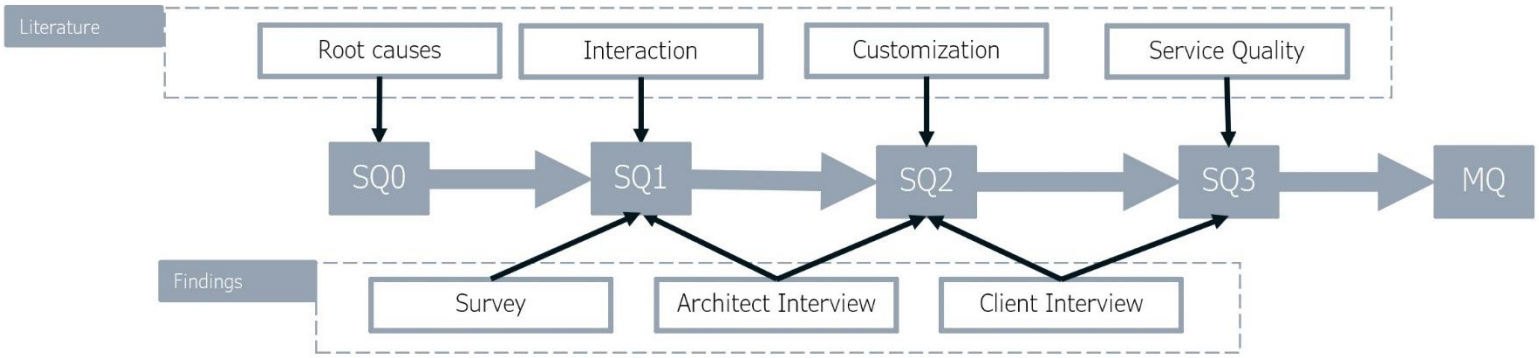


FIGURE 14: METHODS; OWN WORK

Part A Project Survey.

By gathering information about the length of the design stages, the interactions used, the people involved, the estimated satisfaction with this stage, a first insight into the projects was provided. Since the concerned architects track did not always track their processes in documents, data about their interaction was created by filling out this survey.

Part B Client Interviews.

With the previously discussed literature and the filled-out surveys as background knowledge, first a reflection on the case projects was done. After this client were interviewed about how they perceived the service quality within these projects, and what changes were made to provide a service that better aligned their needs. Furthermore, they were asked how this process could be improved, and in what aspects they would like to have a customized service.

Part C Architect interviews

Lastly, architects will be asked to reflect on their own service so that the services provided is reflected upon by the two actors. Furthermore, the architects were asked in special about how they see customization, based on the case project, yet also in general.

A further description of the methods for the interviews can be seen in the interview protocol. For the surveys Microsoft Teams was used as this was a safe yet efficient way of collecting the general project information. The interviews were conducted, recorded, and automatically transcribed in Microsoft teams. The critical path and task interdependencies with these methods are depicted in figure 15.

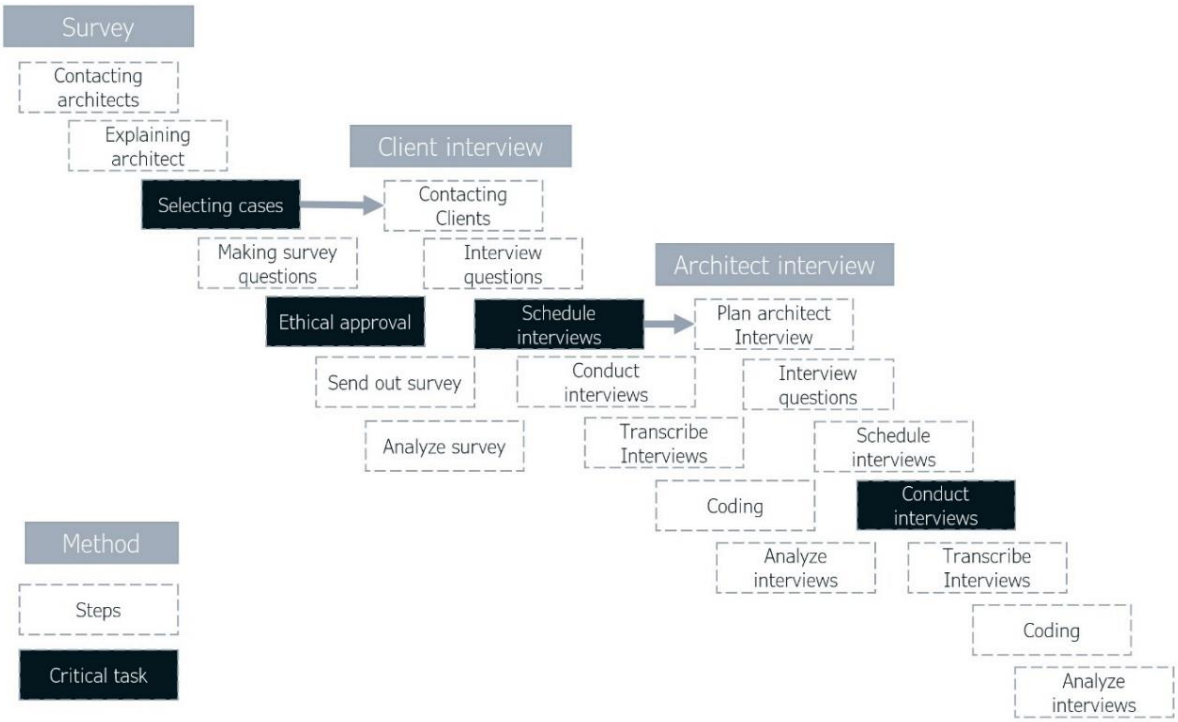


FIGURE 15: TASK INTERDEPENDENCIES; OWN WORK

Case selection

To select the projects eligible for this research, about 60 architects all over around the world were selected and contacted based on their size and vision and type of architecture. First, their size was a selection criterion since the researcher assumed with smaller offices more bespoke services could be offered, as they are more flexible. Second the vision of the architect (as depicted on their website) had to contain words that indicate the willingness to get to know not only the requirements of clients but also the reasoning behind it; to really get to know the client. Third the type of architecture had to be somewhat "exclusive" since with these projects, more resources might be available to offer bespoke services. Yet, this concept is hard to define, and therefore elusive. Although a "weak" indicator the high quality of materials used, and the locations built were seen as selection criteria for the architects.

The cases themselves were selected based on the type of client. To contrast different types of clients, a distinction based on experience and knowledge (as was also done by other researchers in this field) with the client was made. This was done by the participating architects themselves. Furthermore, the architect in charge contacted the participating clients.

Processing data

The data was gathered, further transcribed, anonymized, and analyzed. The data was gathered in OneDrive. The numerical survey data was sorted and analyzed in excel. For the interviews, the transcription of some parts has been deliberately left out in the final transcripts. As with the large amount of data, not all the data could be analyzed due to the limited time available. Extensive explanations of design implementations that were not deemed important for this research were left out. It could be argued that there is a chance that the researcher bias might have slightly

impacted the selection procedure. However, in selecting the data the researcher strived to be as objective as possible.

Data analysis

After the transcription the data was coded using AtlasTi. Via both multiple coding iterations (open, axial, and selective) the statements of participants were analyzed. Themes, of codes about the standard interaction procedure, customizations and perceived service quality statements were made and subcodes were allocated to the themes. These themes were consequently used by summarizing the analysis as has been depicted in the next chapter.

Data management

A data plan that was made in dmpOnline. After consultation with the data steward and after the ethics committee had given permission, the data that was retrieved (mostly primary data collected by the researcher) was anonymised and stored. Storage was both online and on the hard disk of the researcher's laptop. Data of the participants was anonymised. And in advance consent was asked by both using an consent form and asking in person for permission. Considering the FAIR principle, the, anonymised and coded transcripts are also stored in the secured repository of TU Delft, as well as the interview protocol. At request to the researcher, it can be made accessible. My contact details are also in the report, so the research is made findable, accessible (after permission), interoperable and reusable.

Ethical considerations & limitations

During the execution of the methods certain ethical considerations & limitations were faced.

First the surveys questions can be interpreted in different ways. As often with case studies judgement of data can be somewhat subjective. On the other hand, participants may have misunderstood the question. This makes this data less accurate and interpreting it more unreliable. Moreover, in the analysis the researcher is partially unconsciously making another (biased) interpretation of the interpretation of participants. Therefore, the researcher has decided to limit the input of the survey data in the analysis, to only the quantitative and more general project data.

The second consideration was that in the interviews, the researcher could have asked more open questions. Instead of preparing the research with many pre-set questions, the researcher could have kept the structure of the interviews more open, so that participants input was freer. By selecting certain questions, the researcher might have unconsciously already focused on certain aspects, while others might also be of influence. On the other hand, it could be that without asking specific questions it might have been even harder to answer the research questions, since the applicability of data is limited.

Analysis. When adjustments are made in the process, it is often not literally said that this was done for the customer (which is the definition of customization). For example, if someone is happy with renders, is it because they are renders, or because the design that was made appeals to them. However, these challenges are also considered inherent to the type of research (qualitative, explorative case studies)

Research planning

The following planning was used during the research process. Since, the interviews were dependent on the surveys they had to wait until the surveys were filled out. Furthermore, the analysis had to be done after the interviews were transcribed. This did slow the process down somewhat.

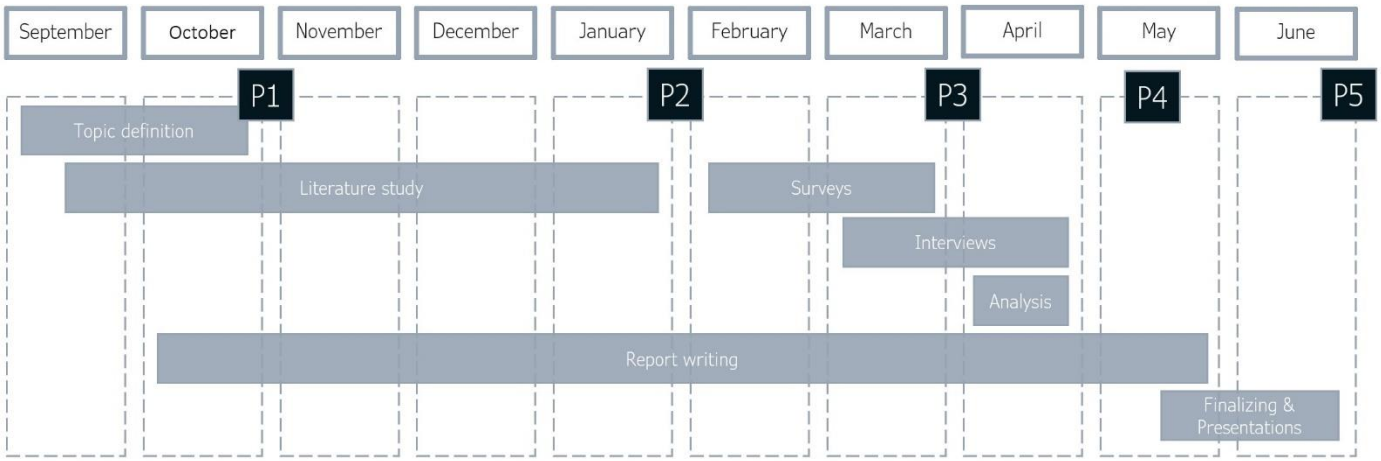


FIGURE 16: RESEARCH PLANNING: OWN FIGURE

Results

To analyze the collected data the same model and its terminology, as in described by (Yin, 2003) in the method section, is being used. To do so the next part first structures the data in a report chapter, whereafter a chapter is dedicated to the analysis itself. The analysis is threefold so that the research question can be answered integrally. The influence of customized interactions on perceived service quality is thus to be understood on a unit level (within a project), case level (in an architecture firm) and on the highest level (a cross-cases) as described in figure 17.

- Unit analysis: In the first analysis, each unit (project) is analyzed individualy, using detailed data on individual customizations. Since the "standard interaction" is part of the overall case, this is described first. Consequently, for every embedded unit (project) the concepts of customization and SQ are compared so that relative influence from customizations on perceived service quality in each unit (project) can be defined. This is done by first mapping out the customizations that were done based on quotes from the interviews. Secondly, based on the service quality gap dimensions as reported by participants a service gap graph over the length of project was drawn. Lastly the customizations are colored light, middle and dark gray for their respective "size" of customization. In other words the extend to which the adjustment is differing from the standard interaction procedure. These customizations are also placed in the service quality graph to compare their impact on service quality. To further analyze the relative influence (e.g. positive or negative) an vector is shown that corresponds with the trend from the service quality graph at the moment the customization was estimated to have occurred. The customizations are also numbered.
- Case analysis: Here the influence of CI on SQ is analyzed by comparing the units from a case. By doing so the differences between different types of clients, and architectural approaches to interaction phases can be made visible. To do so the numerical data about the number of customizations and overall SQ ratings are compared.
- Cross-case analysis: Lastly the relative influence of customizations on service quality between the different cases are compared to see how they differ, also amongst client types.

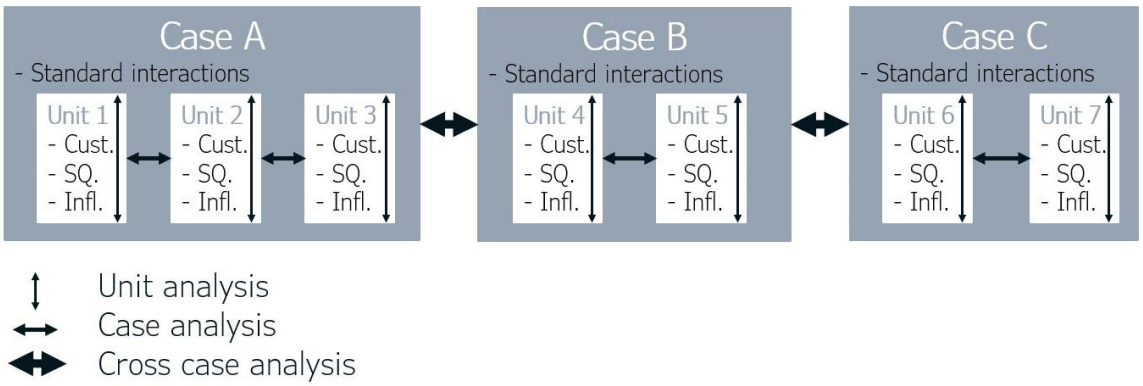


FIGURE 17: ANALYSIS APPROACH; OWN FIGURE

In this analysis all participants were pseudo-anonymized. Architects are referred to by first the case they fall under (A, B or C) and the number in which they occurred (e.g. C1). The participating clients are referred to by the case as well. Partners or family of the participants are referred to by adding B after the participating client code (e.g. client C6B). The units (projects) themselves are referred to by a number (e.g. P.6)

Reporting

In this chapter the data from the interviews and survey is reported and structured in a repetitive layout. This layout will first describe the "standard interactions" in a case where-after for every unit the "customizations", the "service quality" & influence from one onto another are described. To be able to understand the SQ graph elements that influenced the service quality are also described above and underneath the graph.

Architect A Canada 11p 20y

"Standard Interaction"

Architect A is based in Canada, has 11 employees and exists for over 20 years. They have distinguished their service process by five phases, which they explain to their clients by their protocol (a multipage file with detailed textual explanations). Communication in particular is something they deem crucial for good service quality in every project. Architect A2 gives an example of how this communication adds to the customization of their interactions. *I think by, knowing what their expectations are, and knowing what that cost, quality and time triangle is, and what the priorities are there, and what a home run would look like for them for a project, then you're able to tailor your approach in a much better way.* Yet, he also sees that their firm *"always aims for quality before the other two. And that potentially is sometimes our weaknes."*

Fee structure. The firm uses an hourly fee structure for their work, which they can adjust along the process. Beforehand they will make an estimation of what is needed. This enables them to accommodate to the clients needs. Architect A3 continues by stating that they strive to let the client be able to choose how to spend time and money along the process.

Actors. In the first stages of the project both Architect A3 (one of the principals) and a project architect are involved. The project lead is the main contact person for the client. In the phase of detailed design or construction documentation the other principal (Architect A4) is most involved.

Environment. The location of interactions varies amongst the needs of the client. *"We're very flexible in terms of, accommodating their personal needs for meetings locations (Architect A3)."* Yet, they prefer to have in person meetings. *"Seeing someone's facial reaction, not just listening to the tone of their voice, adds another layer and then being in person of course is the ultimate. Then you really pick up on the nuances of what someone is saying (Architect A3).*

Involvement. As Architect A3 explains, they prefer clients that are involved in the project:*"Having clear communication and open dialogue helps us manage their expectations (Architect A3).*

Tools. As Architect A3 explains, the standard uses the following tools to design *Revit, Endscape, AutoCAD.* They also used sketchup and rhino earlier in the days. Furthermore PDF's are used.

Soft skills. The office is also aware of the different soft skills that are needed in this type of projects, and even uses utilizes the different personalities in the team to fit with the type of client.

Customization. Architect A1 recognizes the need for customization of interactions. Architect A3 adds: *I think people really appreciate when you're willing to, move to accommodate their needs.*

Standardization.
Architect A1 explains that altough customization can be usefull there is also benefit in their standardized approach. *I think there's always sort of a core type of approach, maybe in dealing with clients of sort of just basic elements of being very open and understanding and listening and maintaining a lot of transparency and open communication. I think all the clients appreciate that.*

Improving. Architect A3 explains that they continously try to improve their services. *"Quite often we'll do a lessons learned type presentation where someone will present their project and things that didn't go well and what they could learn from that so that they're sharing the knowledge with the rest of the team.* They continue arguing that having a manual on client interaction is something they would like to have. *"How to relate to clients like a step by step guide that, everyone could reference to things…I think could be valuable, it's not something we have though.*

P1	P2	P3
New-Built	Renovation	Renovation
2017	2021	2016
920m^2	35m^2	240m^2
€4.000.000,-	€250.000,-	€1.300.000,-
1769 days	399 days	1102

Unit (project) 1 – Client C1 & Architect A1 (+ A3)

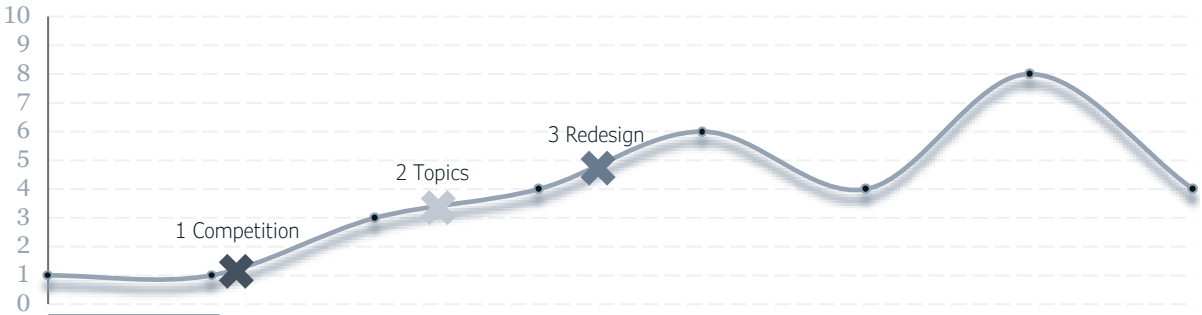
Customizations	Briefing	Design	Construction	Use
Environment				
Actors	Competition			
Involvement				
Tools				
Soft				
Other	Topics	Redesign		

1 (L) Client C1 about design competition: *"we sort of said you know how much just to give us a very high a very not high level but a very just rudimentary sketch of of what you would sort of do. And and we got them both to do that and that was a really ... fun process for us because basically they both delivered obviously very different things, both really cool."*

2 (S) Architect A1 about topics: *"There may have been some questions from time to time where they're kind of asking about certain things in advance, which we which I think we did get into a little bit more maybe than we would like to."*

3 (M) Architect A1 about redesign: *"It took a lot longer and because the project we did a design and it ended up being a little bit too much in terms of cost. So we had to revert back and essentially go through another redesign after we had actually proceeded quite far in the process."*

Service Quality gap	Briefing	Design	Construction	Use
		-Redesign -Budgeting	-Finger pointing architect & contractor	-Fee-structure



SQ rating: 7.1	+Design competition	+Renders +Responsiveness +Architects grasp of clients needs		+Open discussion about service quality via this research

Influences 1 Competit. → 2 Topics. → 3 Redesign

Unit (project) 2 - Client C2 & Architect A2 (+A3, A4)

Customizations	Briefing	Design	Construction	Use
Environment	Online			
Actors				
Involvement		Co-decision		
Tools		Print drawings Sketches	On site mock-ups	
Soft				
Other		Level of Detail		

4. (S) Architect A2 about environment:*" I feel like she kind of guided that like as much as possible we try to meet over teams, so that we can share our screen and kind of look at the drawings together. For most of the time that that's how we did it"*

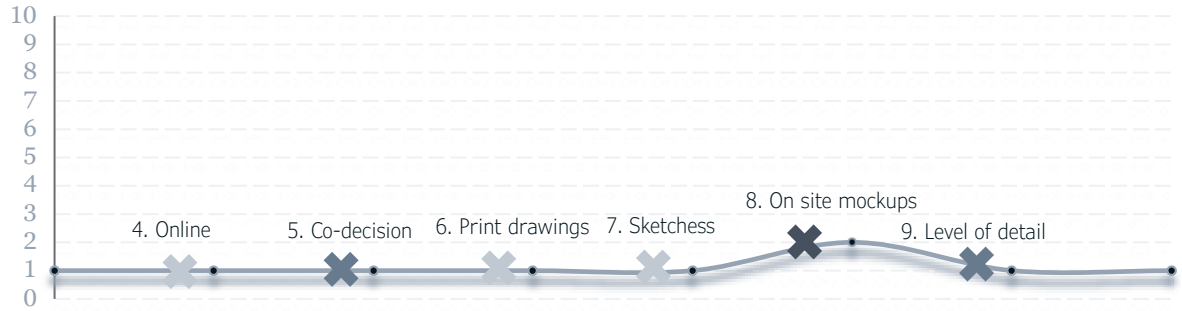
5. (M) Architect A2 about involvement: *"Client C2 is very detail oriented and she wants to go down to the level of detail of inches and kind of really cool really detail into and she knows how she's going to use the kitchen and has everything kind of mapped out. So we were able to go into that depth with her because I think she wanted to go into that level of detail"*

7. (S) Client C2 about sketches: "so the only thing I've pushed more is the quick sketches"

8. (L) Architect A2 about mock-up": *and then there was some mockups that she asked for, she wasn't sure about...those things are to kind of help build that kind of comfort level and be able to provide comment and feedback to the construction"*

9. (M) Architect A2 Level of detail: *"There may have been some questions from time to time where they're kind of asking about certain things in advance, which we which I think we did get into a little bit more maybe than we would like to"*

Service Quality gap	Briefing	Design	Construction	Use
			- Fussy millwork - Less control	



SQ rating: 9.5	+Tone, personality, diplomacy of architect A3. +Managing of expectations. +Asking question	+Sketches, +Storyboards +Samples +Mock-ups +Thorough architect A2 +Client education	+Architect A3 is on it	+Thoughtful gift

Influences: 4 Online. → 5 Co-decis.. → 6 Print dra. → 7. Sketches → 8. On site. → 9. Level of.

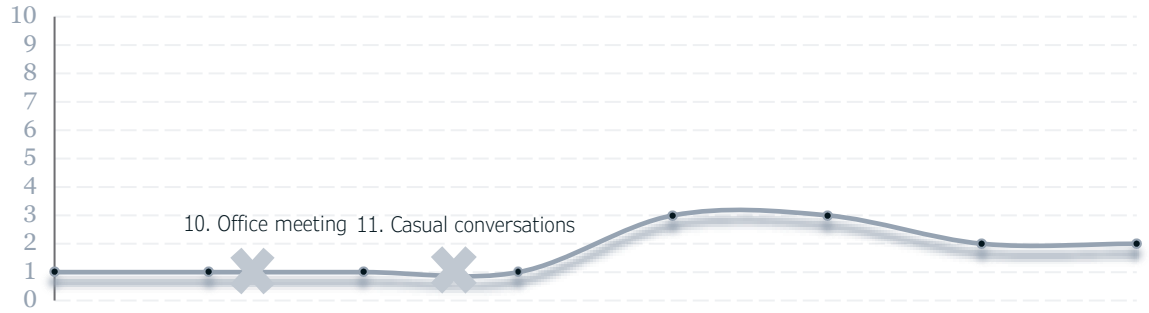
Unit (project) 3 - Client C3 & Architect A3 (+A4)

Customizations	Briefing	Design	Construction	Use
Environment		More office meetings		
Actors				
Involvement				
Tools				
Soft				
Other		Casual conversations		

10. (S) Architect A3 environment: *"They preferred to come to us, and so it worked well for them and worked well for us."*

11: (S) Architect A3 about conversations: *" I think he enjoyed having those casual conversations. And so in that regard it was intense on our time".*

Service Quality gap	Briefing	Design	Construction	Use
			-Concrete planner -Trades -No pushback	



SQ rating: 9	+Education +Big picture +Pro-activeness +Office meeting	+Personality +Rationality +Renders	+ Builder	+Aftercare

Influences 10. Office. 11 Casual..

Architect B

Architect B Switzerland 4p 20y

"Standard Interaction"

Architect B is from Switzerland. They work in a team of four (from which two founders and two employees). Like architect A they have over 20 years of experience. To explain their architectural process to their clients they use a chart with a visualisation of process stages and budgets, legal procedures, etc. As architect B2 describes the need for this chart was born out of a lack of transparency in the industry: *"we wanted to be more transparent and make sure that the client knows where they go and that they feel accompanied and taken care of. In fact, most of the architects try to keep your clients very far away from the project because like this they have more control and can do more what they want."* As Architect B1 explains this transparency goes hand in hand with the education of their (potential) clients. This is expressed by the usage of a blog: *"This one has 24,000 views on the web. So we generated a lot of traffic on our website, which was really cool actually, because we thought that, maybe people can also discover our office by learning all these informations about how architects calculate their fees."*

Fee structure. As architect B1 explains the fee structure of this firm is based on a combination of factors: *"We use the percentage as a as a mark… And we based our fee now more on statistics and expected hours to do the job because this is less negotiable for the client"*

Environment.
For interactions environment, they prefer people to come to their office: *"I prefer face to face contacts all the time. I really like to feel the emotions of the person and have a direct feedback of how they are and how they feel?* Furthermore they are using Whatsapp to communicate with their clients on a day to day basis: *"It makes you, more more available for them and it shows them that you are with them in in, in the team."* Yet, architect B2 explains that they do adjust the location of their interactions to the needs and availability of their clients.

Actors. In the first phases of the project all the architects in this office make a sketch design, to give the client different options. Yet, for the rest of the design architect B2 said that they deliberately choose to work on a project individually: *"when you have two people, then you have two chances of lose information, so it's good to have only one main actor of the project."*

Involvement. Architect B2 explains that clients should contribute to the project as well: *"We are convinced that if you wanna do a project that suits their wishes and needs, they have to be part of the of the research and the design as well".* Architect B1 adds: *"So, we are encourage our clients to do Pinterest boards and come with references and find things and tell us about things they like, they dislikel.* Architect B2 explains some clients are rejected based on this: *"I think if you if you want to take a client on, you work for minimum three years. So you have to you be sure that the three years you're going to work with them, that will be a nice interaction and be happy with. We did decline jobs because we have no feelings with the client"*

Tools. The most important tool for achieving good service quality for this architect are their 3D visualisations. Architect B1 explains: *"We are pushing the 3D to the maximum, so I mean nothing we hand out to the client is not drawn in 3D…. We tried to make documents more attractive than just plans and sections."* And altough they search for new tools, they see benefit in using the tools they are familiar with: *"that's our that's our work method anyway. So we don't really adapt it to each client will not adapt it because it's small or big clients."(Architect B2).*

Soft skills. Both architects that were interviewed mentioned the need to be pro-active: *"I think you should be ahead and you should be leading and that's reassuring for the client as well….Doing a project is something quite scary for most of the clients. And we have to guide them through this. (Architect B1)"*

Construction. Architect B1 emphasises that it is important to hierarchize the communication with the client during construction as well. *"So, I think it's very important to prioritize the information you give them during the construction phase and make sure that there is one aspect that remains between the contractors and you and then you remodel and reshape the information and you give it in a proper way and an understandable way to the client.* In the construction they use "minutes" to document the progress and guide this communication: *"So nearly every point of the minute is accompanied by a picture of what we express and we draw on the pictures to explain the contractors what we want them to do. And so, the clients, they get very precise and also with the nice design and attractive minutes every week of the construction".* This can also help to manage the expectations of clients while: *"people have a tendency to kind of underestimate the amount of time you spend doing something."*

Client differences: Architect B2 explains that the previous experiences of clients can make a difference in how they are served:*"It can also vary if the clients have a precise knowledge and if they already worked with architects in the past. It's quite common that we don't spend so much time explaining them. What's gonna happen exactly because they know it already. So yeah, there is little margin for deviation.* Yet Architect B1 places a nuance with introducing the clients' personality as a determining factor for education: *"you cannot say that an experienced client is gonna be more comfortable or more nice to work with. That's not true. I think the personality of clients is gonna take the is gonna be over his experience. You can have a very experienced clients that that that's a pain in the ass. You can have a totally unexperienced client that is perfectly nice to work with so."*

Communication: Architect B1 explains that transparant communications are naturally to their office. *"we are next to LOCATION, which is a very famous ski resort with architects practicing high prices. And we are perceived as an alternative to the very expensive offices in LOCATION... So we are younger and we were trying to have like more laid back communication, more laid back interactions with clients. And so basically I will speak the same way to a very fortunate client or like someone with like very limited means.* Architect B2 adds that it is crucial to communicate in the early project stages: *"But I think the most difficult in architecture is a communication because people could be very frustrated or thinking you have missed something…But you have to be adaptive, its not rules you can decide and do it with every client.*

Customization. For architect B1 customization is mostly related to money: *"what I told you is the basic service for us and then there are add-ons for instance like an inside architect that we pay on top to go further into that…So, we do deviate, but it's mainly it's generally linked to a higher budget."* Architect B2 nuances this by stating customization is also not done deliberately…*This is really natural.* He further points out that it is important to create limits on customization at the start, so that later on when problems occur procedures and agreements are already fixed.

P4	P5
New built	New built
2019	2020
290m^2	335m^2
€1.320.000,-	€1.630.00,-
999days	850days

Unit (project) 4 – Client C4 & Architect B1

Customizations	Briefing	Design	Construction	Use
Environment				
Actors				
Involvement			Alternative	
Tools	Pinterest	2nd 3D model		
Soft				
Other	Informing about plot restrictions		Translation	

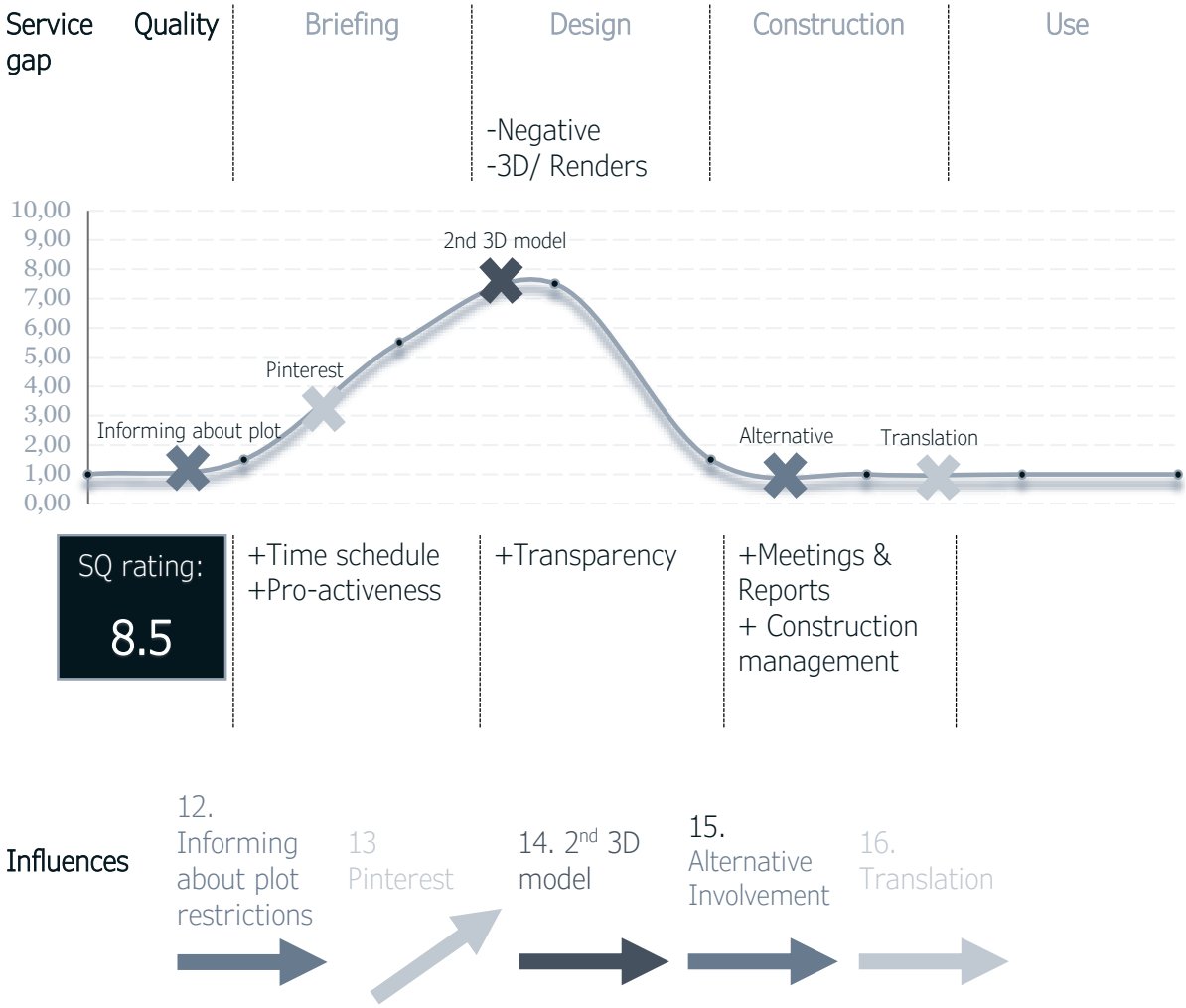
12 (M) Client C4 about informing about plot restrictions: *"ARCHITECT B1 was very proactive in a sense that he then contacted the commun immediately in order to make sure that this plot exist and what are the requirements? So yeah, we were really grateful for him of of doing this work for us so*

13 (S) Architect B1 about Pinterest: *"She did moodboards like in the very early stages. It was really cool because she had moodboards per room with like a different ambience and different mood in every room and like that was so cool or to work with her because she was so into it that she could tell you this room is gonna be this smooth. This room is gonna be this colors. And I want this style or design in these rooms? I mean, she really had an idea... That's very, very rare in in in my 10 years of experience I've had this only with Client C4 at this level."*

14 (L) Architect B1 about the 2nd 3D model: *" in the design phase I guess I'll say yeah, the documents we produced and the way we communicated because she's very visual I think. So, I think she was quite happy with the renders and I also shared my models, my 3D models, and then at some point I had to understand exactly the wooden framework. So I did a second 3D model with just the structure, the masonry and the carpentry, and I knew she was very excited about that. So she had the feeling that she could follow and be involved and take part."*

15 (M) Client C4 about involvement: *"There was a lot of, you know, kind of like personal dreams involved in these projects, you know, kind of like long time dreams. I had very clear ideas of what I wanted. UM. So hence it made sense for me to be quite involved in the process"*

16 (S) Architect B1 about translation: *" And then in the construction phase, I really think. I mean, she had no clue what was happening and what was gonna happen. So, I mean, she definitely totally relied on me for this. And I mean, I included her in everything. I translated everything for her. She was here at at every single weekly meeting. So I was always translating important things for her. So I mean I I was availability again.*


Service gap
Quality
Briefing
Design
Construction
Use
-Negative
-3D/ Renders
10,00
9,00
8,00
7,00
6,00
5,00
4,00
3,00
2,00
1,00
0,00
2nd 3D model
Pinterest
Informing about plot
Alternative
Translation
SQ rating:
8.5
+Time schedule
+Pro-activeness
+Transparency
+Meetings & Reports
+ Construction management
Influences
12. Informing about plot restrictions
13 Pinterest
14. 2nd 3D model
15. Alternative Involvement
16. Translation

Unit (project 5) – Client C5 & Architect B2

Customizations	Briefing	Design	Construction	Use
Environment				
Actors			Project manager	
Involvement				
Tools				
Soft				
Other	Plot acquisition	Price calculation		

17 (L) Architect B2 about plot aquisition*: "I found the buyer to buy his old house and we found a land for him on which we start the project."*

18 (M) Architect B2: "Normally we not calculate exactly the price before to put the project to the commune. Normally we do it after, but CLIENT C5 was a bit afraid about if we get enough money or not to build the house. So we do the calculation before to put the to get the payment from the customer."

19 (M) Architect B2 about PM*: And also we choose to work with PM, he is very precise with detail and invoice and CLIENT C5 is a client who requested a very precise point. So he said, OK, that could be very much together for this. This kind of point. But it's not the usual configuration. Usually we follow our own construction, so it was specific to this mandate*

Service Quality gap	Briefing	Design	Construction	Use
SQ			-Early invoice -No use of app	-Deficiencies -No debrief

SQ rating	Briefing	Design	Construction	Use
7.5	+Education +Managing expectations		+Communication with PM	

Influences: 17. Plot acquisition → 18 Price calculations → 19. Project Manager

Architect C Australia 4p 7y

Interaction (by Architect C1)

Architect C is from Australia, also have four employees, and the firm started 7 years ago. Altough their client processes are not formalised, they are established based on the previous experiences, and project and client types: *"It really will vary so much from project to project and client to client I find".*

Fee structure. The fee structure for this architect is hourly with an upper and lower limit. This fee structure is based on the brief: *"we would always try and get a pretty succinct brief before I even prepare a fee proposal for a project, so I think those early interactions, to make sure everyone knows what direction you're heading in, are critical right from the start".* In making this fee proposal, the architects also try to incorporate and educate the client: *I'll always prepare it in such a way that the client knows he'll be working on different aspects in different stages.*

Environment. In terms of the interaction environment this office also prefers to talk in person when presenting: *"We'd always prefer to talk the client through those concepts as we present them rather than sending them via e-mail and having no explanation attached to them."* Yet they do adapt the environment of interactions to what is prefered by the client: *"I mean, we're pretty adaptable if a client wants to meet on site or wants to discuss something in person and that's their preference, then we'll always try and do that if we can."* Later in the process the interaction environment often changes: *"A lot of that was done via e-mail and over the phone I guess once that initial sort of relationship set up, it's much easier than to sort of carry through to, electronic and phone interactions."*

Actors: Based on the task required in the project, they will allocate the task to their employees: *"So for instance, in that initial concept phase it might be mostly me doing that concept work with a bit of assistance from a graduate, a graduate doing sort of the 3D modelling and then during the documentation stage it might be sort of ARCHITECT C4 in the office who does a lot of the documentation work and so the communication path will change during that process*

Tools. Typically this architect uses multiple tools along the process: *"Hand drawings and images would typically be sort of first concepts and then yeah, CAD drawings and 3D model. Although in saying that P7, because they were on a budget and we they opted not to have a 3D model done which I don't typically deviate on."* This architect also makes the effort of explaining their clients: *"I would always prepare a separate document that provides a detailed written explanation and in sort of plain English to break down how we approach it. And yeah, the things that might not be evident just looking at the drawings and diagrams we've provided."*

Soft skills. The architect relies on her soft skills in adapting to the client: *"So I feel like I listen and then try and use my knowledge to guide the client in a way that I think will work most effectively for them and their particular needs."*

Customization: The architect sees a different process with different types of clients: "Typically with a client who's never worked with an architect before tends to be, it tends to be a more challenging process because they don't understand the process, potentially don't underestimate the time and approval process and length of construction time. So an uneducated client or a green client tends to be more work for us because we gotta guide them through that process

and educate them at the same time, manage their expectations. And, a client who's been through that process before has done a build or a major renovation before they, it tends to be easier because you don't have to fill in all the gaps the whole way through. There's less sort of hand holding through that process, so they understand what the stages are and what to expect at each stage." Yet, the personality of clients is also a determining factor in how they approach the client: "*I mean it really just comes down to personality, I think mostly. Yeah, trying to pick those clients who are like minded and come to you because they like the work you do rather than trying to direct us too much in the way that they want their building to look. It's not always easy to see that at the start when you're engaging that first couple of times with the client."* Based on these differences they will adjust the process by education: *"with residential architecture, you kind of selling someone the dream really you've gotta be really invested and passionate about that the project as much as they are, and kind of communicate that in the way that that's presented to the client. So in that way, I think you kind of have to be informed by the way, that the client likes to communicate and understand where they're coming from before you can prepare the design, but also communicate that to them.* Furthermore the architect thinks that the limitations on time and resources impair the possibilities to customize further: *"They'd be really hard to customize something with a small practice, I reckon, because it will often depend on sort of programming at the time and resources available. I guess there is some customization in the way that I structure a fee proposal to start with as in, who will be working on that at separate stages?*

Service quality. In assesing whether their clients are happy with their services this architect relies on their communication: *"we keep lines of communication pretty open. So we'd hope that our clients would let us know if something is not you know, to their satisfaction. We don't have any formal processes in place."* However, she thinks that a post occupancy evaluation can be very usefull: *"post occupancy evaluations and talking to clients after the projects completed, that's something we don't have a formal process for either, which is perhaps to our own detriment like it might be useful to have something. Not just about the process, but also about, you know, the design and the material specified and how that performing before them overtime.*

P6	P7
New built	Renovation
2016	2020
1880$\boldsymbol{m^2}$	200$\boldsymbol{m^2}$
€6.600.00,-	€500.000
1877days	729days

Unit (project 6) – Client C6 & Architect C1 & Architect C2

Customization	Briefing	Design	Construction	Use
Environment		On site		
Actors	C1 & C2 involved		PM	
Involvement			Self-decision	
Tools				
Soft				
Other		Redesign	Client includes own contractors	

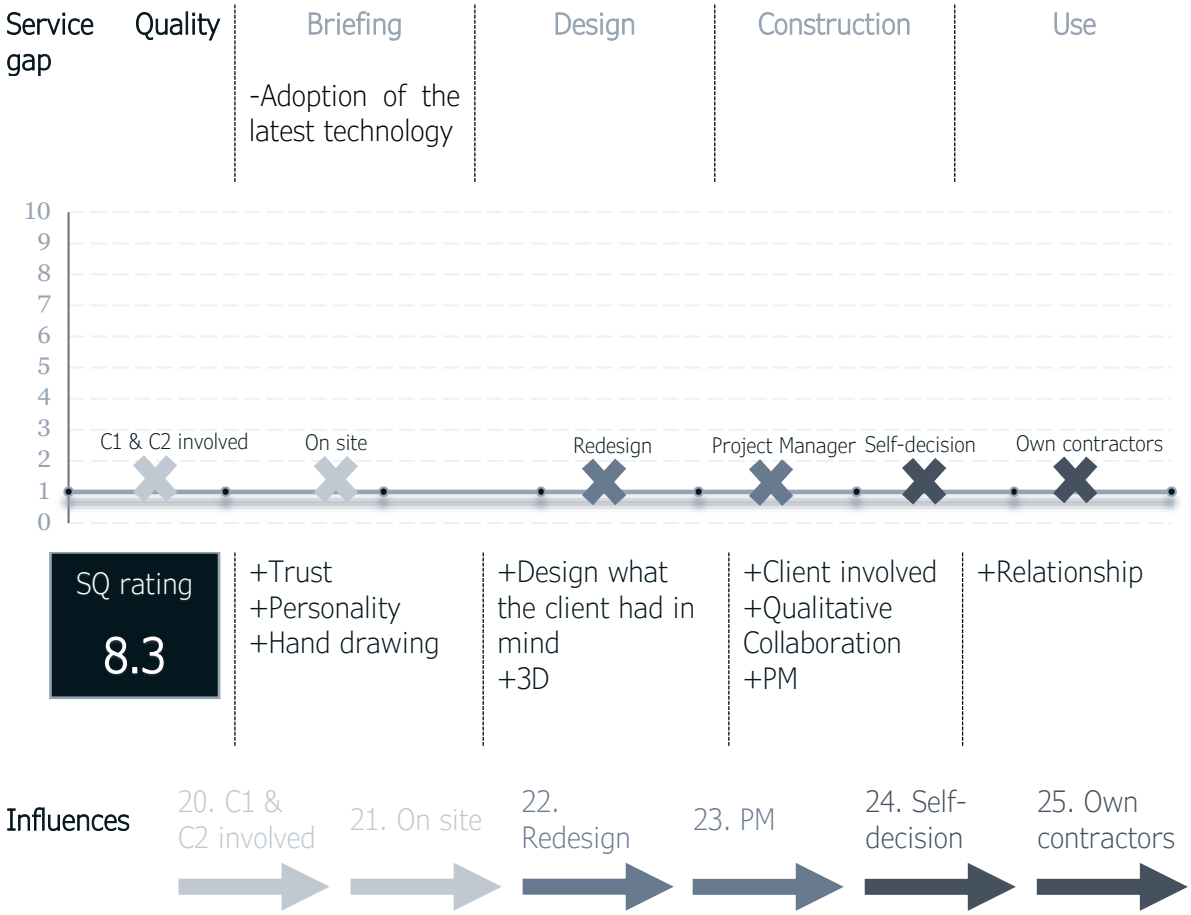
21. (S) Client C1 about on site*: "there were a number of instances where CLIENT C6 wanted to be on site and talk through things so that happened a bit, which was fine, because it's, you know, it's only 15, 20 minutes drive from the office and because it was such a significant project for us*

22. (M) Architect C1 about redesign: *"with P6 it was completely redesigned from the original design, like completely checked out and started again."*

23. (M) Client C6 about PM: *When we went into this project that the most important thing I needed to have on the ground, because I was working full time was actually to also have, an independent project manager*

24. (L) Architect C1 about the client including own contractors: *I guess there were. There were trades and people that that CLIENT C6 wanted to bring in during that process so I guess to some degree that was a client driven kind of direction, so we had to incorporate sort of lighting designs and electrical contractors and security contractors and people like that were client sort of preferred contractors*

25. (L) Client C6 about involvement: "*if you ask the builders, I was an unusual client because I was directly involved. More so than than most of it from from my understanding and the feedback from the builder and the trades... We were very disciplined. We had weekly or fortnightly meetings, all trade meetings and you know, minutes and charts and all of those sort of things.*

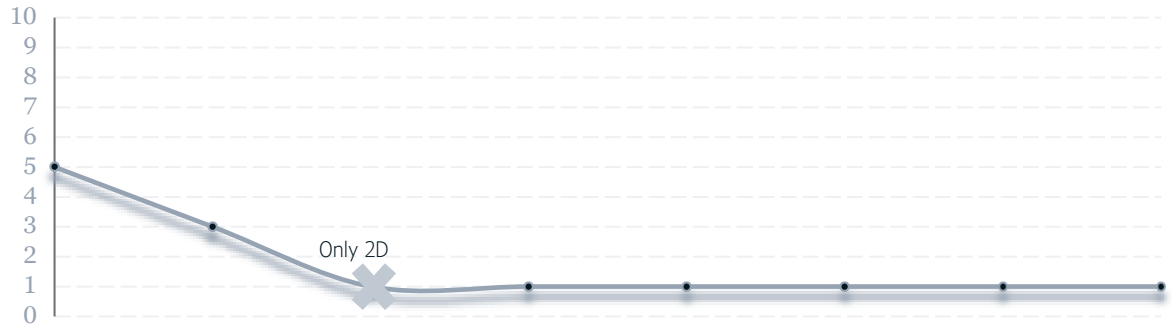

Service gap
Quality
Briefing
-Adoption of the latest technology
Design
Construction
Use
10
9
8
7
6
5
4
3
2
1
0
C1 & C2 involved
On site
Redesign
Project Manager
Self-decision
Own contractors
SQ rating
8.3
+Trust
+Personality
+Hand drawing
+Design what the client had in mind
+3D
+Client involved
+Qualitative Collaboration
+PM
+Relationship
Influences
20. C1 & C2 involved
21. On site
22. Redesign
23. PM
24. Self-decision
25. Own contractors

Unit (project) 7 – Client C7 & Architect C1

Customization	Briefing	Design	Construction	Use
Environment				
Actors				
Involvement				
Tools		Only 2D		
Soft				
Other				

26. (M) Architect C1 about 2D: *because they were on a budget and we they opted not to have a 3D model done which I don't typically deviate on.*

Service gap Quality	Briefing	Design	Construction	Use
	-Haven't built trust yet	-Invoicing update		



SQ rating: 9.3	+Treatment +References		+Attention to detail	+Aftercare

Influences 26. Only 2D

Analysis

Units Analysis

In this paragraph the influence of individual customizations on the SQ is discussed. A textual explanation of the types of customizations and the estimated influence on service quality is given and an overview is provided in table two.

Unit 1: When analysing the identified customizations from unit one, it can be noted that the design competition (1) was a major customization. This is typically a "mixed focussed customization" since both different design options were presented by different types of actors. This customization can be regarded as positively contributing to service quality, when considering the clients quote in the previous chapter. The other two customizations (adjustment of topics (2) and redesign (3)) can be interpreted as a customization that were done because of the need to cope with an already existing service quality gap. In terms of IPA analysis these customizations could be interpreted as to deal with negative emotions with the client. However, based on the SQ gap graph these customizations did not unequivocally decrease the gap, it might however have helped to stop it from increasing. Since both these customizations were task based, it could be argued that a person-oriented customization, could have been better here to impair the gap. Typically, this was also something that was recognized by the architects themselves, by firing the architect that was allocated to this project. So, for the customizations #2 and #3 it is not possible to determine their influence on the SQ. As in this period other SQ indicators were addressed to be of influence. Although it could be argued that the possibility to discuss extra topics on behalf of the client should have helped to limit the further increase of the service quality gap.

Unit 2: The influence of the customizations on the SQ in unit two was not always obvious. This unit was quite special, since both a high number of customizations were used, and the service quality gap remained low along the project. Therefore, it is not possible to assess the extent to which the customizations have contributed positively to the service quality. However, the other way around, based on the graph it could be argued that customizations have at least not influenced the SQ negatively. The client interview showed that the client was particularly happy with the use of sketches (7) in their conversations. Furthermore, when reflecting on IPA analysis, the onsite mock-ups (9) that helped the architect to give answers to the clients' questions. The client also stated to be very happy with this.

Unit 3: For this unit, the customizations identified are limited to office meetings (10) and casual conversations (11) the influence on service quality here is deemed positive, however remains based on the judgement of the architect. Both customizations are people focussed, and the extent to which these customizations have influenced the SQ is unsure, since the gap was already low.

Unit 4: This unit was quite customized with five customizations. First customization that stood out was the informing about plot restrictions (12). This is particularly interesting since; it is not common to see a task focussed customization this early on in the project. The client stated here that this what really convinced them that this architect was doing more for the work, it can thus be interpreted as influencing the SQ positively. This client was also quite distinct. For example, they used Pinterest (13) to a very detailed extent to communicate designs more, which they liked. Particularly interesting was the increase of SQ gap due to the lack of 3D. Even more interesting was that the use of a second 3D model (14), seem to have countered the growth of the gap. Lastly the high involvement in construction (15) and translation (16) of terms by the architect could have very well contributed to a positive perception of service quality.

Unit 5: In this project three clear customizations were done. The acquisition of the plot (17) was not something that was clearly mentioned when reviewing service quality, yet it is likely that this client, who was a friend of the architect, did appreciate this customization. Furthermore, the client persisted on having a price calculation before the design. This was something they addressed to be happy with. Lastly, they hired a project manager who they were very outspoken about to be positively contributing to their perception of service quality. The extent to which the customizations contributed to the SQ is hard to determine, since the gap was already low.

Unit 6: This project could be regarded as the most customized, since there were six customizations of which two were large ones. The client here was particularly happy with inclusion of a Project Manager (23) and own contractors (25). Furthermore, she was positive about the meetings on site (21), and the possibility for her to be involved (24) to a very high extent. The exact contribution to the service quality however, is not possible to be determined, because of the overall low service quality gap.

Unit 7: This project stood out for the fact that there was only one customization, in the usage of 2D drawing (26) to save money. Although this customization seems paradoxical, by leaving out the "standard" 3D drawings this should be regarded as customization, while following the definition, this adjustment can be regarded as deviation from the standard to better meet the clients wishes. The exact influence is not possible to be determined.

TABLE 2: CUSTOMIZATIONS, SQ AND INFLUENCE

#	Name	Type	Phase	Size	TB/PB	Gap	Infl.
1	Design competition	Actors	Briefing	L	H	1	++
2	Topics	Other	Design	S	PB	3.5	? (+)
3	Redesign	Other	Design	M	TB	4.5	?
4	Online	Environment	Brief	S	PB	1	? (+)
5	Co-decision	Involvement	Design	M	PB	1	? (+)
6	Print drawings	Tools	Design	S	PB	1	+
7	Sketch	Tools	Design	S	PB	1	++
8	Level of Detail	Other	Design	M	H	2	? (+)
9	On site mock-up	Tools	Construction	L	H	1	++
10	Office meeting	Environment	Design	S	PB	1	? (+)
11	Casual conversation	Other	Design	S	PB	1	+
12	Informing about plot restr.	Other	Briefing	M	H	1	++
13	Pinterest	Tools	Briefing	S	H	3	+
14	2nd 3d model	Tools	Design	L	H	7	++
15	Alternative	Involvement	Construction	M	PB	1	? (+)
16	Translation	Other	Construction	S	PB	1	+
17	Plot Acquisition	Other	Briefing	L	PB	1	? (+)
18	Price calculation	Other	Briefing	M	PB	1	+
19	Project Manager	Actors	Construction	M	PB	1	++
20	C1 & C2	Actors	Briefing	S	H	1	? (+)
21	On site	Environment	Design	S	PB	1	+
22	Redesign	Other	Design	M	TB	1	?
23	Project Manager	Actors	Construction	M	PB	1	++
24	Self-decisions	Involvement	Construction	L	PB	1	+
25	Own contractors	Actors	Construction	L	PB	1	++
26	Only 2D	Tools	Design	M	PB	1	? (+)

When considering the different project phases, it is interesting to note that most customizations were implemented in the design (12), and an equal amount of seven customizations in both the briefing phases and construction phases. It is particularly interesting to see that quite some clients were unhappy about the use phases, and that no customizations were identified here.

Most of the customization identified (17) can be interpreted as being a "people based" (or focussed) customization while the customizations are done to improve the service for clients, and not necessarily the task (or design) itself. However, in redesigns (2) for example the goal of these customization is mainly to improve the design. Lastly there were some (6) customizations identified as having both the goal to improve the service & and the product (design). E.g., the design competition, the usage of Pinterest, design competitions or informing about plot restrictions also have the goal to contribute to the design itself and are thus regarded hybrid. When considering the different phases, it is interesting to see, that during the briefing phase only hybrid- (3) and people focussed (3) customizations were identified, while in the design phase, apart from hybrid (3) and people (8) also two task-based customizations were done. In the construction some people-based (6) customizations were identified as well as one hybrid one.

When considering the size of the customization and its influence on average (counted the amount of +) a large customization typically has 1,67 + (10/6), while medium and smaller customizations only have 1,1+ (11/10). These results could imply that a larger customization is related to a higher (positive) impact on service quality. However, more in depth research is needed to be able to construct such an argument.

The most frequent types of customizations are "other" (9), tools (6), actors (5) and environment (3) and involvement (3). Zero customizations in soft skills were identified. This is interesting because, multiple architects have mentioned that their soft skills are what they customize most. However, how they customize could not be identified based on the analysis of interviews alone.

To conclude, the relationship between customized interactions and SQ in every individual unit is difficult to determine based on the availability and form of data. It is likely that other elements as reported by participants are of influence too. What stood out is that the customizations with project managers (19)(23) were perceived very positively. Even client C2 who did not have a project manager, would have liked one. Other customizations that have influenced the SQ positively are the design competition (1), sketching conversations (7), on site mock-ups (9). Also, the information about plot restrictions (12) and the inclusion of own contactors (25) was perceived as positive. A customization that may have particularly countered the increase in service gap was the usage of a second 3D model (14). Yet, based on the data and the interpretation of it in this chapter, the reliability and applicability of these results is limited. The success of a customization seems to be dependent on multiple factors, such as the type of client, type of project, type of issues that need to be solved. When considering the types of customizations, it is found that in the briefing phases more person focussed customizations were done, as compared to the designing & construction phases. Lastly, it was found that in the units' studies on average "larger" customizations also had a higher influence on perceived service quality. Although soft skills were not identified, it is argued that these types of customizations are being implemented somewhat unconsciously. Nevertheless, architects reported that they believe that these soft skills are a determining factor in the service quality, clients might perceive.

Case analysis

In this paragraph the influence of customized interactions on service quality is being analysed by looking at the units as part of their case studies.

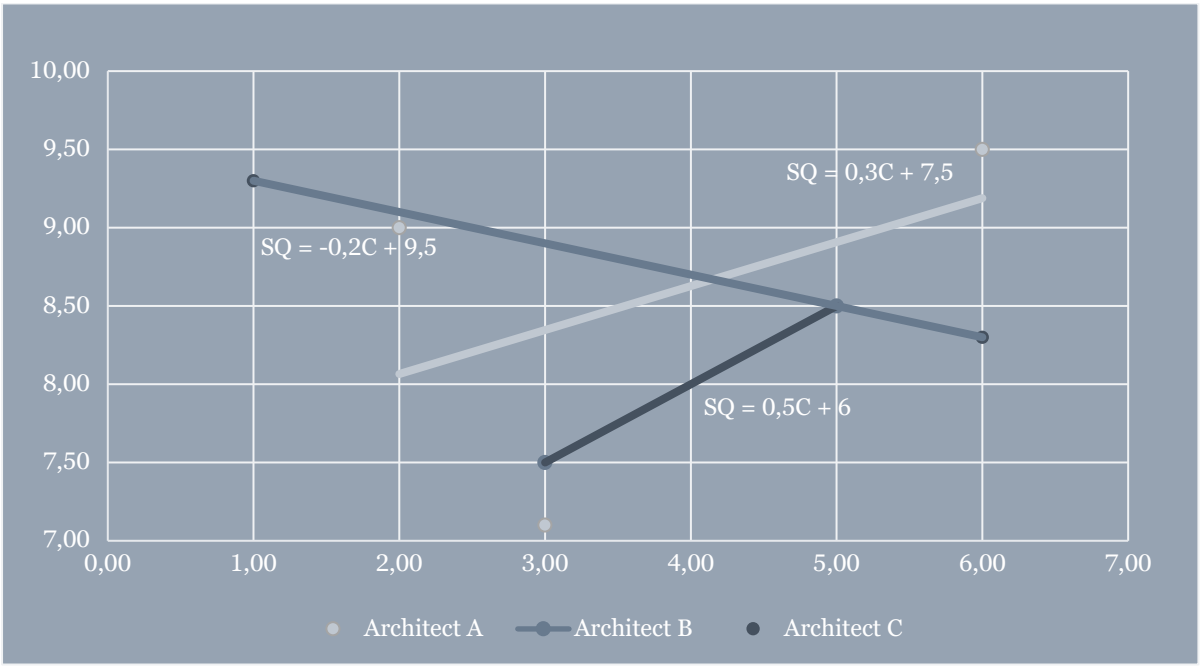


FIGURE 18: CUSTOMIZATION/SERVICE QUALITY GRAPH PER ARCHITECT

Since the standard interaction process without customization is different for every architect, their customizations should be assessed relative to their own standard process. The comparison of the customization of three different architects is therefore, in this explorative study, indicative and to be treated with caution. It is crucial that this notion is taken in consideration when interpreting the results. In the graph above (figure 18) the correlations between the amount of customization and overall SQ rating is compared for the units within every case.

As one can can see in the graph above, when comparing the SQ rating with the amount of customizations, the cases from Architect A & Architect B show a positive correlation between the amount of customizations an the perceived service quality. This could indicate that the customizations have contributed to the perceived service quality. However, it cannot be measured what the perceived service quality for this project without customization would be. Furthermore, the correlation is found to be negative for the projects of Architect C. This could imply that the different standard procedure of the architects is more a determining factor in the sensitivity of service quality for customization. In other words, an increase in customization might only contribute to a higher service quality in certain type of architecture firms. More research is needed to be able to make a statement about this.

Cross-case

In the graph with all projects combined in figure 19 on the next page no significant correlation between the number of customizations (C) and the perceived service quality rating (SQ) can be recognized. The trendline, does show positive relationship of 0,022. Yet, the high standard deviation, the low number of projects and the high number of other variables that could influence this relationship, makes that based on these numbers no judgment can be yet made about whether the amount of customization influences the perceived service quality.

Project	P1	P5	P6	P4	P3	P7	P2
Customizations #	7.1	7.5	8.3	8.5	9.0	9.3	9.5
Service Quality	3	3	6	5	2	1	6

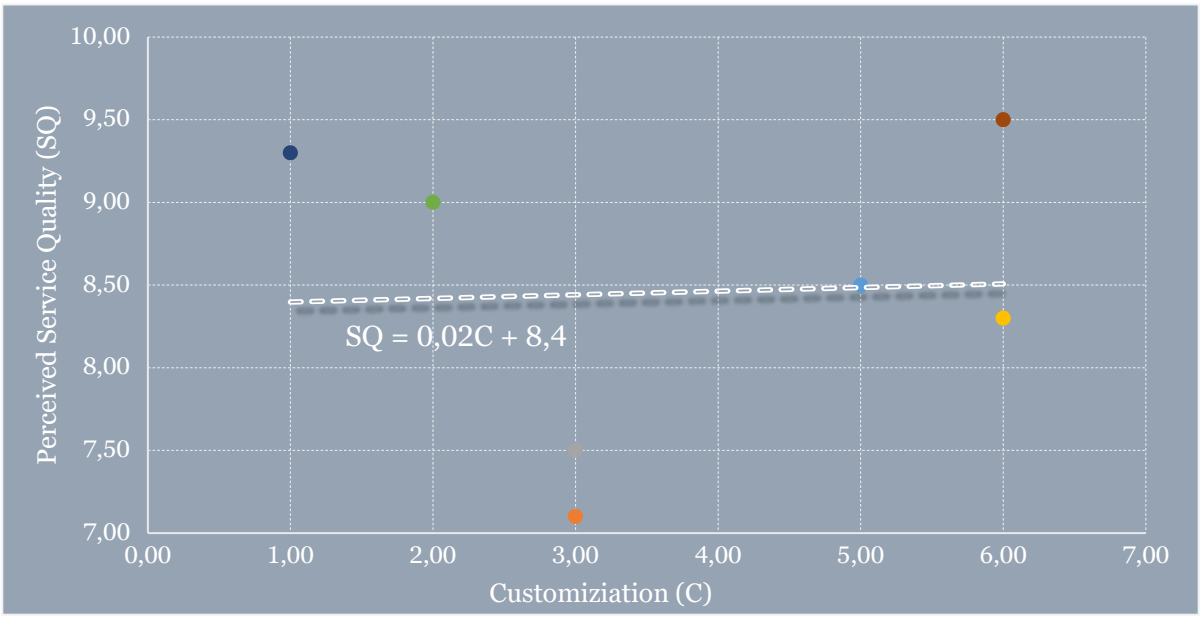


FIGURE 19: CUSTOMIZATION / SERVICE QUALITY GRAPH FOR ALL PROJECTS

Since both Architect B1 and C1 argue, customization is related to resources, it is also worthwhile to see the relationship between money and the number of customizations for the projects in this research. The graph aside shows this relationship, and depics a strong possitive correlation. So, a correlation between the resources spend and the amount of customization does exist in the cases studied.

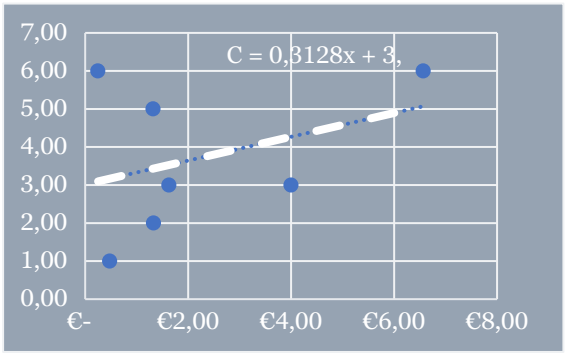


FIGURE 20: MONEY / CUSTOMIZATION

Yet, when reflecting this to relationship with service quality, one could argue that in bespoke projects, more customization might be expected, therefore a lack of customizations might in these cases lead to a lower service quality, while in "standard" projects the standardised project functions well on its own. To best implement customizations and achieve high service quality by that, the most important factor seems to be to know what customizations would fit best and thus to know your client and their expectations.

When comparing the different types of clients (experienced vs not experienced), it should be noted, the amount of customizations was higher with experienced clients (4.25 = 17/4) as opposed to none exerienced clients (3 = 9/3). Not only on average, but also when comparing the clients within a case, the amount of customizations was higher with the experienced clients. The data about previous experience can be found in appendix C.

Furthermore the group of experienced clients reported higher SQ ratings. Altough this correlation does not necessarily show a causation, it could be interesting to see whether if the projects with unexperienced clients would be customized more the SQ ratings would become higher as well. Altough architects could try to implement more customizations with unexperienced clients to find out, it is not possible to fully objectively compare the projects, since it is not possible to replicate the exact same circumstances. In the next chapter the interpretation of these results is further being discussed in synthesis with literature.

Discussion

In this explorative research a conceptual model of the interactions between clients and architects in private residential projects was made, surveys were conducted and interviews with clients and architects were performed and analysed. Although there was limited literature available about this niche and novice research topic, the following insights and answers can be induced when comparing the analysed data with existing literature and theory.

SQ 0: Problems

If any, what are root causes of the problematic relationships between architects and clients in private residential projects? As described in both the chapters of introduction and theory, the following causes have been addressed in literature. The research found the following compatibility with the literature and assessed actual case studies:

- Fee structure: Problems related to the percentage-based fee structure as described by Angral (2019) were not adherend in the case studies of this thesis due to the use of hourly based fee structures (as can be seen in the cross analysis of the fee structure from the cases studies). Stepping away from the percentage-based fee structure was also the solution that Angral (2019) opted for. It remains interesting to see that Architect B used their own type of fee-structure, that combines the best of both variants. More research could be done to find out what best works for what type of clients and what types of projects.
- Lack of experience with client: The lack of experience with clients (as mentioned as problem contributors by Royal Institute of British Architects (2020) & Forsythe (2008) did not seem to be contributing to the cause of a problematic relationship in the case studies (as can be seen in the cross analysis of service quality). Good education and client learning, as recommended in literature (Siva & London, 2012) might have impaired the potential grow of problems with clients that have less experience (as explained in "standard interactions" procedure in chapter four (analysis). Furthermore, as argued by Architect B1, the personality of clients and their willingness to be involved in the project might be of a bigger influence for the relationship quality. This relationship quality, from which Chan et al. (2004) found, it could be the biggest indicator of client satisfaction, seemed to be contributing to the perceived service quality of participants in this research as well. This relational quality is further supported by the notion in the assessed cases in that the soft skills of the architect (as mentioned in the cross analysis in chapter four, and SQ elements in the appendix) were often mentioned as a contributor to the perceived service quality.
- Assess client requirements: According to Kärnä (2014) the inability to assess client requirements by architects is a possible cause of problems. Although, client C1 and C6 had a redesign (as can be seen in the project analysis), the inability to assess client requirements was not a theme within the cases studied. Client C6 even mentioned that the architect was able to draw exactly what she had in mind. Client C2 appreciated the sketches as a tool for communication. Still client C4 thinks the assessment of client requirements can be improved for example by the usage of new technologies, that enable clients to virtually play with the different design options.
- Approachable architect: The view of clients being arrogant, inaccessible, and unapproachable as mentioned by Frimpong & Dansoh (2018) was not adopted by the clients in the case projects, only client C1 had a minor conflict with the architect at that time.
- Formalised interaction: The lack of a formalised procedure as mentioned by Emmitt (2014) was also seen in the cases studied. None of the architects had a formalised procedure for managing their clients. In these cases, the architects seemed to rely on their soft skills, yet they say all to believe such a formalized document could be useful.

SQ 1: Interactions

What is the standard interactions procedure? The following paragraph relates the findings of the standard interactions in as described in the analysis:

- Location: All architects mentioned to have a preference to meet in person. However, they say to be flexible in the choice for their location (as can be seen in the cross analysis in chapter four). This is opposite to the statement from Frimpong & Dansoh (2018) who stated that clients reported architects to be inaccessible and unapproachable.
- Involvement: Clients are involved to varying degrees. Latortue et al. (2015) described, involvement of clients helps to have more accurate client requirements. Yet, whether this was also the case the projects studies cannot be stated based on the research data.
- Actors that were involved were mostly the project lead. In some cases, other architects were involved like juniors or people that focussed on construction documentation. Some projects also included a project manager. However, Cuff (1991) raised the dilemma of architects being a team of specialised or generalists. In the cases studied, both ends seem to be represented, while architects often allocated certain tasks to architects that were more specialised. On the other hand, there seem to be more general skilled architects working in the smaller architectural offices (Architect B & Architect C).
- Tools. All the architects did use sketches, CAD drawings and renders. The programs that the architects used differs amongst them and their projects. Ansari & Mela, (2003) mentioned that internet enabled the personalisation of communications. This personalisation is not something that was found to be used in the case studies, apart from standard communications via Whatsapp and Email. This is striking, since Erzetic et al. (2019) found that adjusting the user interface could increase the user satisfaction.
- Soft skills. As Emmitt (2014) stated, interpersonal skills are extremely important in the face-to-face business. It was therefore interesting to hear (as can be seen in the interview transcripts) that most architects considered themselves introverts. Yet, architect B1 & B2 liked communication with people and described themselves more as outgoing persons. It could very well be that one's personality might also be differing amongst the other personality types of the people we talk with.

SQ 2: Customizations

How is being customized? The customizations that were found in the units were the following:

- Environment: Although the environment of interaction was varying within and amongst all projects, customizations were done. It was noted that clients preferred to meet online (unit 2), in the office (unit 3) and on site (unit 6) in particular.
- The involvement of different actors was customized in the case of unit 1, by which two architects were involved in making a concept design for the client. In unit 6 two architects were involved in the main communication. Furthermore, in both unit 5 and unit 6 a project manager was included.
- Client involvement was typically hard to conceptualise. Yet, it was found that in unit 6 the client was involved in construction to a very far extent. Also, in unit 4 the client was involved in the design more than usual. In unit 2 the client also had a more intense involvement in design compared to the standard of architect A.

- The tools that were used were frequently customized. In unit 4 the client preferred to work with Pinterest and with an additional 3D model. In unit 2, the client preferred to work with sketches and printed drawings and had several on site mock-ups made. An inverse customization was found in unit 7 whereas the client preferred to use only 2D drawings.
- Although based on the transcripts of the interviews no deliberate customization in soft skills was found. These could very well have been present in the cases. Yet, the method of interviews might not be the appropriate tool to find out whether they were customized or not.
- Other customizations included: change of the topic to the client's needs (unit 1), the architect informing clients about plot restrictions beforehand (unit 4) and helping the client with plot acquisition (unit 5). Also, the redesign was a customization that was done twice (unit 1 & unit 6). The level of detail was adjusted in unit 3 as well. In unit 4 there were also some casual conversations, and in unit 5 there was a price calculation upfront to the request of the client. Last other customizations were the translation of information (unit 4) and the usage of many clients preferred specialists and contractors (unit 6).
- When considering the type of customizations (Kasiri et al., 2017), it was noted that most of the customizations were people focussed, thus more related to functional quality. This is no surprise since; customizations are done to better meet the clients wishes. Usually most of them have thus the goal of either working on the relationship with the architects or explaining certain aspects, rather than contributing to the design itself (corresponding with the answering and positive and negative relations from (Gorse et al., 2000). It was also noted that most clients think the architects knows best what tools to use and how to design, so there were less customizations that were task based (focussing on technical quality). Yet, the re-designs were typically task focused customizations, while they are focussed on improving the design itself. Some customizations had a hybrid goal, of improving the service around both the functional and technical quality and thus and people and product related matters.

Apart from the last statement made above, the literature on customization in private residential projects is close to none. Therefore, it is not possible to reflect these findings to existing literature today. Yet, a new research model has been constructed for this research, as can be seen below. This conceptualisation could function as a measuring tool for customizations in possible upcoming research as well. The method of analysis can be altered to increase reliability as the research shifts from exploratory to more substantiated field of research. Another recommendation for further research would be to include more projects (also less successful projects) to increase reliability, and significance of findings.

SQ3: Service Quality

What is the SQ, what elements influence it and how is it evaluated?

- All the overall service quality rates that were given by the participants were sufficient (7+ on a one to ten scale). Yet, it is hard to make an argument with those findings, since the reliability of the input of the clients, might for example be influenced by the selective participation to the project. The selection procedure by the architects might unconsciously have included only clients that were happy with their architect. However, for example P1 where the clients broke with the architect and finished the project by themselves is an interesting exception to this. This project is of special value to the research because in this way also a less successful project was included in the research. Also, the interviewing technique of asking participants for their ratings directly might not be the most appropriate way to find out what the perceived service quality of participants was.
- The service gap evaluation showed that most clients experienced a gap in the phase or close to the phase of construction. Some clients addressed concerns about the collaboration from the architect with contractor, financial audit of contractors bid and aftercare.
- Elements that were brought up by the clients as contributors to their service quality were the following. They talked about the need for financial consultation, interaction environment, tools, education, management of expectations, communication, construction services the inclusion of project manager, collaboration, standardisations a debrief and finally both the soft and designing skills of the architect. These elements can function as a new framework for assessing the client's satisfaction with the service in further research.
- Furthermore, the participants were asked about the "famous" service quality dimensions of Parasuraman et al. (1985). Surprisingly enough all participant reported to be totally happy when being asked about each of the service quality dimensions. This either indicate that the clients were very happy about the service or more likely that these standard dimensions are not the most appropriate tool for assessing service quality in private residential projects. Yet, the mentioning of the iron triangle dimensions might indicate that clients are more product focussed. This conflicts with the statement of Forsythe (2008) that client rely on service quality as a surrogate means of assessment.
- When asked to evaluate service quality clients talk of myriad things. They mostly refer to units of product quality, costs and time. Yet, also the relationship with the architect and mostly their soft skills like being transparent, pro-active, well communicative were mentioned to contribute to the clients perception of service quality. This last statement is in line with the findings of Chan (2004) and Serrador & Turner (2015), since they found that relationship quality a big indicator of client satisfaction and overall project success.

Main question:

"(How) can customized interactions influence perceived service quality, in the case of private residential projects?"

First, can customized interactions influence service quality? When comparing both the concepts of customization and perceived service quality, a positive relation can be seen for the projects with Architect A and Architect B. However, for architect C this relation is negative. This can indicate that the standard procedure of interaction might affect the moderating effect of customizations on service quality. In other words, the effect of customization of interaction depends on the standard interaction of that architect. In the architecture firms, were there was a relation between customization and perceived service quality, it is likely that this relation is due to other factors that influence both, concepts like for example the relationship quality (Serrador & Turner, 2015), rather than just being the cause of customization alone. When comparing all the projects against one another, a minor positive correlation can be found. Yet, this correlation is only 0,02 and the standard deviation in this graph is very high. Furthermore, due to the limited number of projects and relatively subjective and explorative method of online interviews and sensitive method of analysis no argument can be constructed to explain whether the customizations as described in sub question two in general, contributed to the perceived service quality as described in sub question four. Yet, on when analysing the individual units, it was found that the "bigger the customization" the bigger the influence on perceived service quality. So, although not highly reliable this might imply a positive influence.

Secondly when answering how customized interactions can improve service quality, it should noted that the right customization is all depended on the type of client, and type of project. It is therefore crucial for an architect to be able to assess this. The soft skills are thus deemed crucial. This is in line with authors like Peña & Muñoz (2020) who have stated that the soft skills are a critical project management success factor. Therefore, it was notably that the soft skills itself were not mentioned nor identified as a customization in the cases studied. As, the customizations in the briefing phase, were mostly "people focussed" (functional quality) this could very well help to build a qualitative relationship (Serrador & Turner, 2015) which in turn could form the basis of the collaboration with trust for the rest of the project. After all, as Winch (2010) states trust is key for project success. For the designing phases some task-based customizations were identified. It could very well be argued that due to the specialised profession, the standardisation of task-based aspects of the service is beneficial for project success. Yet also here this will depend on the type of client involved (Oluwatayo et al., 2014). E.g. with experienced clients, task based customizations, could contribute to a higher service quality, when they want and are skilled to contribute to the design itself.

Overall, it is a challenging topic to research, in special when considering the many variables that impact the service quality, and the definitions and models that had to be constructed to come up with an academically sound argument on the research questions. Therefore, further research is needed. This research can include both a larger number of projects as well as a broader scope of projects, by for example including less successful projects, projects from other countries or other sectors. In addition, it is also relevant to note that several comments by both architects and clients have been made in the interviews about the benefit of having certain parts of the interaction process standardized (as also mentioned by Mertens, (2022). Furthermore, several participants note that clients also have obligations in creating a higher service quality. The dilemma between customization and standardisation as described by Kasiri et al. (2017) will therefore continue to

exist. Nevertheless, this research offers a first steppingstone for further research on this topic in this field. There is still a lot to study and improve definitions and model(s). Another topic that might be interesting to investigate is whether a higher budget would increase the customization. The few findings in my research showed a relationship between budget, and amount of customization. It might be that money increases the tolerance by architects for customization & innovation on the client's proposal.

The other elements mentioned that might contribute more significantly to an increased service quality are described in the discussion of SQ3. In special the financial consultation, usage of more digital tools, education of clients, management of expectations, transparent communication, better construction services, inclusion of project managers, a debrief after the project and finally both usage of soft- and designing skills of the architect could help improve the collaboration of clients and architects in private residential projects. Especially in the segment of private residential projects, the soft & communicating skills of architect interfacing the client are deemed important, considering the communicative nature of the project (Emmitt, 1999) and combination with the introverted nature of some architects. On top of that, in bespoke projects, the expectations of clients might be even higher, therefore good expectation management, in combination with agile customization might be beneficial here. Monitoring and training are recommended to increase service quality, or else communication should be allocated to other team members or an independent project manager. Above all designers should maintain the lead in choosing and implementing the customizations (Cheng et al., 2006). The new development and deployment of (relatively cheap) digital tools for customization can improve customization in the traditionally slowly adapting construction industry.

Conclusion

Conclusion

In this chapter the final answer on the main question is given: *"(How) can customized interactions influence perceived service quality, in the case of private residential projects?"* To find out the research started with a study on theoretical concepts and literature, in the fields of interactions, customizations and service quality.

Root causes - SQ0

As a first step the current problems in the service of private residential projects were researched. Thereby an answer on the first sub question was given: *What are root causes of the problematic relationship between architects and clients in private residential projects?* It was found that the nature of these types of projects contributes to the problem as well as the attributes from its clients and architects. Furthermore, it was argued that the industry and (lack of) education also contributed to the problematic relationship between architects and clients.

For clients these projects are often the biggest expense of their life. Furthermore, private residential clients are often unexperienced, which is why they often have limited knowledge (Forsythe, 2008). It is argued that these clients therefore rely on service quality in their assessment.

This service quality is just the aspect that architects tend to neglect, while architects rarely rely on formalized procedures on how they should be managing their clients (London et al., 2005). How to manage clients, is also something architects are generally not schooled in. They adopt a trial-and-error process instead (Oluwatayo et al., 2014).

The nature of the project adds to the problem as clients and architects are often complete strangers, with differing world views and values (Siva & London, 2012) that must work together for a long time on a complex (Emmitt, 1999) were conditions are negotiated and challenged all the time (Barett & Stanley, 1999; London & Chen, 2004).

Furthermore, the slowly moving construction industry, as was also addressed by Client C5, is not quick to adapt innovation and digitalization as possible problem solvers to this problem. We are thus faced with a large, complex and, dynamic agent-principal problem, on which both actors lack the tools or motivation to improve and an industry that is not quick to improve.

Interactions - SQ1

The second question that should help to give an answer to the main question is: *What is the standard interactions procedure?* Based on the background knowledge from the surveys and analysis of both client and architect interviews, different aspects of interactions were analysed. The aspects were: procedure, fee structure, environment, actors, involvement, tools, soft skills and others.

The first aspect is how the procedure was explained to clients. Architect A used a detailed multipage document for communicating their interaction process, while architect relied on their concise figure. Architect C, did not mention to be using a tools for communicating their interactions up front.

The environment of interactions is not set by the architects. Yet, they have a preference to do their official meetings and presentation at their office.

The actors involved differed per project and architect. Yet, with Architect A mostly the project lead was the main person for communication with Architect A3 being included in the early phases and architect A4 in the construction documentation. For Architect B typically one architect would be the main contact person throughout the project. This was the same for Architect C.

The involvement of clients in the design was typically not something that was defined up front by the architects.

All the architects used CAD software to draw their designs and renders to present them to their clients. Architect B focussed especially on the 3D visualisation of all their communications as they believe this makes the design better understandable for their clients.

Considering the soft skills, it is interesting to note that except for Architect B the architects said to be introverts. This is typical since their profession is all about transparent communication.

Customizations SQ2:

How was being customized? Based on analysis of both the client and architect interviews, a varying degree of customizations were found in the cases. Since based on interviews alone it is challenging to assess whether something is a customization. Following aspects needed to be taken into consideration when evaluating whether an adjustment was to be labelled as customization: First, it must be a deviation from the standard approach of architects. Therefore, a clear definition of the standard interactions is needed. This is something that cannot be established based on one architect interview or survey. Secondly, it is necessary that the client has been the reason for adjustment. Most likely it is the client that had needs and wishes, which resulted into a deviation of the standard interaction process. Yet, it can also be argued that an "unusual" adjustment that was done by the architect to better align to the clients needs. The conceptualisation model can be used in further research.

The customizations identified (26) were mainly people oriented or hybrid. In the designing phases also some task-oriented customizations were identified. As argued in the discussion, it could be beneficial to build a relationship and implement people-oriented customizations in the briefing phases, and that later when this relationship is established, based on the type of client also some task-based customizations could be implemented. Crucial to the success of a customizations and its influence on service quality is the architect's capability to assess what customization could fit best with which clients in what phase; his soft skills.

Service quality SQ3

De third sub question is threefold: *What is the SQ, what elements influence it and how is it evaluated?* For all three parts of the questions the client interviews were analysed.

Participants were asked to rate the quality of service they received. All grades were sufficient with a variation from 7.1 to 9.5. This is typical since, it is likely that most architects have selected these clients, from which they estimate to be willing to participate to the research. This are mostly the more satisfied clients. Furthermore, clients were asked to rate the service quality gap along the process. Most clients reported an increased gap in the construction phase, due to a lack of communication, audit of the contractors bid and aftercare.

Elements that were mentioned in the evaluation of service quality are: financial consultation, interaction environment, tools, education, management of expectations, communication,

construction services, the inclusion of project manager, collaboration, standardisations a debrief and finally both the soft and designing skills of the architect.

The service quality was mostly assessed based on the traditional dimensions of time, quality, and cost. Myriad of advice was given on how architects could improve their service. For example, the financial consultation of clients along the project. The use of digital tools both in designing and communication (during construction). Transparent communication along the project, and a debrief after the project were also mentioned as improvement. Yet, it is important to note that this is only for some projects, while overall the clients were found to be very happy with the services they had received. The use of a project manager stood out as contributing to a good service quality. Even architects and clients that did not use a project manager said they recommend using one.

Effect customized Interactions on Service Quality - MQ

"(How) can customized interactions influence perceived service quality, in the case of private residential projects?". First, can CI influence SQ? When comparing all the projects together (cross-analysis), the correlation is limited (0,02). Especially when considering the high standard deviation, no significant effect of customization on the relationship between interactions and service quality was found. Although no direct relationship between the suggested improvements and the perceived service quality can be seen, these might offer good starting points for customization upon the different types of clients, when considering their previous experience, desired involvement, and whether they have a clear definition of their needs. Therefore, it must be noted that the solution to the problematic relationship between architects and clients could also be found in standardisation.

Based on the data that was gathered and analysed per case, a positive relationship was found in the cases of Architect A & B. However, with Architect C this correlation was found to be negative. This could indicate that the possible influence of customization depends on the standard interaction procedure of architects or that SQ is more related to other elements. Yet, it is not possible to compare with a situation without customization. Furthermore, with such a low number of cases studies, the effect of other external influences is not clear.

How customizations could help to improve the perceived service quality could be related to the nature of the project, clients, and the phase of the project itself. It was argued that in the beginning of the project more people-oriented customizations could be done to strengthen the relationship between architect and client. Later on, depending on the clients' traits, task based customizations could be implemented as well. Furthermore, with the units studied, the amount of previous experience of clients was also positively related to both the amount of customizations and satisfaction. Therefore, it could be worthwhile to investigate if more customizations with inexperienced clients might improve their SQ evaluation.

Considering the communicative nature of private residential projects, it is deemed that competency of the architect in soft skills like personal communication are crucial to assess what the appropriate or bespoke interaction customization would be to achieve higher service quality. Knowing that most of the architects in the cases studied stated to be introvert, these competences need to be monitored and if deemed necessary further developed or delegated to another team member or project manager.

Although evidence is not very convincing and reliable this research showed, customized interactions could possibly influence the service quality positively. When considering the high expectations of clients in bespoke projects, and the resources available, customizations could very

well offer possibilities to further increase service quality, therefore it is worthwhile experimenting with implementing and researching them further (especially in the group of inexperienced clients).

Further development of the research framework and a larger number of cases included could help increase the reliability and validity of the research. The framework developed and analysis as performed by the researcher in this thesis may very well offer a starting point for further research on this topic

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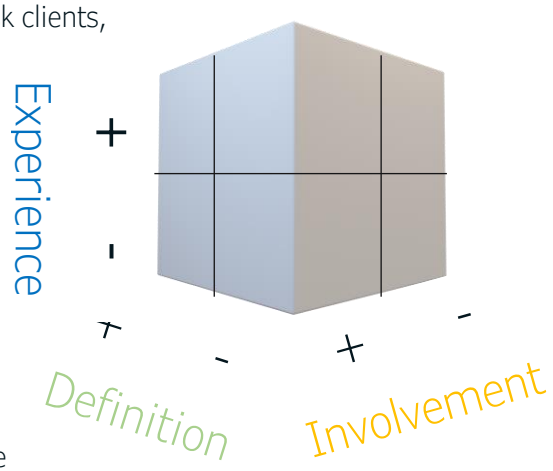
Appendices

A: Suggested customizations

To customize the service most efficiently, it could be useful to ask clients, not only what their needs are but also how they would like the process to be in terms of their preference for time, money or quality) but also in how they would like to be involved in the design.



I suggest to ask the following question to determine a client types:

- Do you have previous experience?
- Do you want to be involved?
- Do you have a clear image of what you want?

Based on the classification of (eight different types of) clients the following recommendations could be given.

Type of client		Service
Experience +	Involvement+ Defined needs	Design participation
Experience +	Involvement + Undefined needs	Briefing game, Design participation
Experience +	Involvement - Defined needs	
Experience +	Involvement - Undefined needs	Design participation, briefing game
Experience -	Involvement+ Defined needs	Process education
Experience -	Involvement + Undefined needs	Process education, Briefing game
Experience -	Involvement - Defined needs	PM
Experience -	Involvement - Undefined needs	Deny

Suggestions for customizations by Architects:

- Process education helps those without experience that want to be involved.
- Briefing game; Helps those that have to define their needs.
- Design participation helps those that want to be involved.
- PM helps those without experience.
- Clients with no experience, that not want to be included, and have undefined needs, need a very good project manager, but I would usually avoid these type of clients.
- The implementation of soft skills can be very important, try to get to know what personality type your client is, and what kind of type they would like you to be.
- Customizations focussed on product might be more successful in achieving service quality at the start of the project, while customizations focussed on product might be better later in the project during the design phases of the project.

B: My insights

Insights as client

Based on the observations of my research, If I were to hire an architect, I would include a project manager in construction. Furthermore, I would make sure I have a good personal connection with my architect. Also, I would select a transparent architect, that communicates well, and uses appropriate techniques and programs to get my vision out of my head, let me play with multiple design options and educates me early on about the upcoming process and its uncertainties. Furthermore, I would like to work with an architect that slightly overestimates the costs and duration, so that my expectations are managed, while still being educated about the possible and size of risks and uncertainties. Apart from selecting an architect which taste I like they need to have a reliable track record on time, budget and quality. The soft skills of this architect is that they are responsive, reliable, emphatic are also deemed very important to me.

Insights as architect

If I were to be an architect, I would try to engage with that type of clients, that want to communicate with me and would like to be involved in the project yet does respect the limits of my capabilities. Maybe the most important thing for me would be the shared enthusiasm and pro-activeness of the architect.

Suggested improvements for architects

Architect A customizes quite a lot. They could maybe improve in providing some more push back to the clients to fasten the process, and a proper reflection on the contractors bid. They are very detail oriented and make the most beautiful and ingenious design, but clients not always looking to be a “guinea pig”. Another improvement could be to even more transparent about the invoicing and related works along the project. A more formal debrief and post-occupancy evaluation could help not only as a reflection for the architect, but also it might contribute to the service quality of the client.

Architect B does not formally customize a lot but have a good client education in their 3D visualisation. Also, their pro-active attitude and commitment to a project was well appreciated. They could maybe improve in the communication around the construction, so that the client feels better represented against the contractor. Also improving the “playability of their 3D model” might help to further increase the service quality with their clients.

Architect C have very positive reviews. Based on the interview recommendations, they could only improve by working more with new techniques and have a post occupancy evaluation after the project is completed. Their services with the clients interviewed were perceived very positive.

Unit 1:
Recommendations to improve by Architect A1:

- Construction updates from the side of the architect as well
- Include a Project Manager

Client SQ assessment based on: Product & Pricing.

Client C1		
	Composition	Family of five
	Profession	Hotel owner
	Prev. Exp.	1 Family in construction & architecture

Client SQ quotes:

- Fee-structure: *"I just don't know if billing based on the length of time of the project is the right way to do it right. And I don't know what the better solution is. I don't know how the other ones do it."*
- Guinea pig: *"You know, she did say I've always wanted to do one of these in the house, but I've just never been able to do it. It's never worked out that. But right away, my warning sign should have gone off and I should have said I don't wanna be your Guinea pig."*
- Budget: *"I would have ended or started every single meeting with are you presenting me something that is within my budget."*
- Debriefing: *"they're not checking in on us to see how things are going or anything."*

Client Recommendations

- Improve business side (fee structure).
- Start every business meeting with something within the client's budget, because this client did not want their project to be a guinea pig.
- Educate clients.
- Manage client expectations.
- Put effort in getting along with the contractor.

Other client quotes

- Reversing decisions: *"you know, it's funny. When you reverse decisions, you feel sheepish about it, right? Like you don't feel like telling them? Ohh, I changed my mind … But yeah, you don't feel necessarily like you can sort of openly talk about the things that you decided that you don't want anymore like that."*

Unit 2:
Recommendations to improve service by Architect A2:

- Better budget estimation, earlier in the project
- Meeting in the beginning to arrange communication with contractor via the architect.

Client SQ assessment: "do I have a space or a project that I enjoy looking at and I enjoy being in".

Client C2		
	Composition	Wife and husband
	Profession	Board & advisory committees in art
	Prev. Exp.	3 Previous construction of their house

Clients SQ quotes:

- Communication: "I'd say it's the talking stage at the beginning is the most important stage. So if we're communicating well together, she's listening, asking questions, making suggestions to me. I'm listening to those suggestions, considering them that whole period. If you get that right, the project will be pretty smooth".
  Briefing: "I created a design brief and an image file and… I threw a few things in there that were really not our style and asked Architect A3 what she thought about them. And Architect A3 was brilliant. She goes: It's a very good design, I don't think it would work with this House. And so there was a diplomacy to Architect A3 that was great because I had deliberately put in things that I thought were not right and I wanted her feedback."
- Fee structure: "I think if you if an architect is making very little money at the end. They lose interest, so with I prefer time and materials. We pay them for their time, which is I think fair… Because I paid for Architect A2 and materials, we had the luxury of saying we shouldn't do it. And I wonder if we had paid a percentage, there would have been more motivation. I'm not selling saying Architect A3's that type of person, but there might have been motivation to push through something that might not have been right.
- Standardisation: "I think at the beginning it was very customized. And I think as their firm has grown, it's become more standardized, but in a good way because some things need to be standardized, billing needs to be standardized. Uh am Presentation boards I've noticed, are standardized. It's the same. They're using the same programs and they work well for. I imagine I know other clients of theirs and there are other clients are extremely happy too".
- Soft skills: "Because Architect A3 so calm, I always feel things are under control, even though they might not be. Because I that sort of calm interaction, I know that if there is a problem, there will be a solution."
- About invoicing: "I like seeing the invoices. I like to know when they've traveled. I get all of that on the building and I think that is good transparency and creates trust."

Client Recommendations.

- Be a little less detailed up front.
- Safe some time, by pushing back the client a little sooner.
- A one year debrief, to see is there anything we could have done better.

Unit 3:
Recommendations to improve by Architect:

- Communication (by project lead)
- Project management
- Informing the client
- Collaboration with builder
- Other project lead

Client C3		
	Composition	Family of three (+dog)
	Profession	Advertising & Marketing
	Prev. Exp.	3 Chalet built with design & built

Client SQ assessment based on: Responsiveness, vision, creativity, materials, interactions, collaboration.

Clients SQ quotes about project:

- Personality: *"And what I've always liked about ARCHITECT A3, she's quiet, she's not gregarious, she's very confident. But, she would always, justify why she's doing what she did and or why she's making those decisions. And I think I wanted someone like that."*
- Rationality: *"And I think, if you can rationalize or justify why you're making the decisions that you're deciding on for the right reasons you'll get into a better place. I'm ever having discussions with ARCHITECT A3 about, suggesting some stuff because, I know design and … she would like…she shut me down, you know. Which is good. Which is why you hire these people, right?"*
- Education: *"They're very good at explaining space or referencing if I didn't understand."*
- Pushback: *I think I would have loved to have a little bit more. You know the pushback that I would have got from ARCHITECT A3 and design, I wish I would have had more pushback from the builder on what's the right thing.*
- Excited: "Like when she started bringing designs,, I was probably pretty excited to buy it because I think, we were already aligned based on, like I said, these briefs I gave her, but then she still she still pushed it, which was great"
- Standardized protocol: "She'd already built in a process on how to share her design, her vision. And I don't think I ever felt a little bit like in the dark or waiting. I mean, there's always a bit of, like, waiting for some of the designs and things like that, but. I think it was pretty well handled, just the amount of interaction and sharing for sure."
- Contractor "I really like the builder that we worked with… And a lot of people said if you like the guy, that's a good way to go because you can just chat, be open with this person."
- Interactions: "Sometimes I wish I would have more interaction, but they couldn't run a business that way. But it would cost you, it's just not practical."
- *Big picture: "so the stuff I like the most was like the big picture stuff. You know the big vision stuff, not so much the little details."*
- Soft skills: *"They don't. They don't pamper you, which I also like. They don't need to do any of that stuff. I don't need that. I don't want to. She you know, didn't stroke my ego or any of that stuff. And she was just very decent and respectful. And it was great."*

Client Recommendations

- If I had a criticism, I just wish she was more sustainable
- More pushback
- I would have liked a more formal handover
- PM
- Real audit of the contractors bid by Architect A4.

Other Clients quotes:

- Guinea pig: *"A lot of architects you know, they love designing crazy things, but do they want to live in a crazy monster house? I don't know. I think they want to design it. They wanna live in a place that they love."*

Construction: *"I think I would like an architect to say, you know what? Spend the money here. Don't spend it here. You know, I wish I would have had a little bit more of that".*

Unit 4:
Recommendations to improve by Architect A1:

- Budget management
- Being a bit less impulsive

Client C4		
	Composition	Family of four (+dog)
	Profession	Customer Experience consultant/expert
	Prev. Exp.	1 Family in construction

Client SQ assessment based on: general feeling, reliability & empathy

Client SQ quotes:

- Pro-activeness: *"Architect B1 was very proactive in a sense that he then contacted the commun (municipality) immediately in order to make sure that this plot exist and what are the requirements?... So yeah, we were really grateful for him for doing this work for us so… And also, this proactivity of Logan was clear for us that, OK, he kind of like showcased us that he's willing to go beyond our expectations, you know he's willing to do more for the work…*
- Education: *already in the first meeting… he showed us this time schedule that they had made in order to manage our expectations… So, I found that was excellent.*
- Negative: *"some point in the beginning, I got quite frustrated with Architect B1… First of all, he was quite negative. Second of all, I had a feeling that he thinks I'm stupid. I don't understand the construction. But it took him a while also to understand what kind of a personality I am"*
- Transparancy: *"I was happy and ARCHITECT B1 was Involving me in the decisions, he was very transparent in the beginning as well about the expected time schedule. And so, uh. So he was very good at managing my expectations."*
- Renders: *"I was expecting him to use a bit more the. 3D modeling or rendering, you know, kind of like that I could have seen better, different design options. But they didn't. They seemed*

like they didn't want to invest too much time and resources in the beginning of the project, so we were really working a lot with simple 2 dimensional design ideas. So, I was slightly bit disappointed with that because I really would have expected and wanted them to provide me more kind of like visual options to play with, you know, kind of like…Eventually they did something like this, but in a very. Let's say simplify its manner… But yeah, that was quite late in the project. So yeah, most of the decisions have already been made, you know for. I wasn't. I I wasn't able to change too much based on that 3D model anymore"

- Weekly meetings and construction reports: *"He also made reports of every meeting, that he sent in an email, he wrote it in a in a document and he sent it to all the participants after the meeting, which was fantastic because it allowed me to also stay on top of the project, you know, kind of like exact. And then also ARCHITECT B1 used a lot of pictures he took on site, you know this and this needs to be done. This is his responsibility to do by that and that time. So, these weekly meetings and the reports out of them were excellent in the construction phase to help us to understand where are we going, what needs to happen."*
- Discussions: *"When the construction was going on, we met anyway, so that allowed us to have lot of kind of like unofficial discussions as wel"*
- Learning: *"So, the whole process was a learning for me, by default. But I don't know somehow it was easier than I thought in the beginning. Because ARCHITECT B1 was managing the construction so well, I think it ended up being quite positive experience for us."*
- Whose side: *"So sometimes he needed to educate me on some things or inform me or manage my expectations so. So, it's a balancing act for the architect and they need to be very attentive about that. How do they make the customer feel? You know about whose side are they really? As said towards the end, I felt that we were getting into mutual understanding and mutual respect. The more we work together, the more we understand how the other one wants to work. Then we were able to respect that."*

Client Recommendations:

- Being empathic.
- Understanding the expectations of the customer, their expectations, their needs, their wishes.
- More tools to help "green" clients to decide during the briefing phase.

Other Client Quotes:

- Customer service: *"Architects need to be interested in people by default, and they need to be interested in investing that time to get to know their clients and I do believe that some architects are not at all interested in doing that… Because this is a business, it's a service business.Education today of an architect is not responding to what they are doing in real life. Not at all. And the same thing applies for this customer service. It's a customer service job. I'll bet there's not a lot of time spent into education of an architect of how to serve the customer."*
- Clients: *"There are a lot of people or customers who are not used to doing that or don't know how to do that or cannot even decide what kind of a colors they want or style they are looking for. So maybe the architect needs to have some more tools in order to help people to decide. What they want, what are their wishes. Because I find the briefing face*

is crucial. And the more support architect can give to the customer in the briefing phase, I think the easier it will be for the for the actual execution then."

- *Sharpest pen: "And at some point I felt like I'm not able to get kind of like the latest technological opinion unless I go out myself and try to find a person who can tell me this. So, I I felt like I wasn't able to rely on ARCHITECT B1, knowledge level or the construction guys knowledge level because they weren't always the sharpest pen. And you know, hence this was for me the biggest the biggest gap and the biggest thing that I would like to, and I would have been willing to, pay for that kind of neutral knowledge. But I didn't know where to get get it. There's no place where to get that."*

Unit 5
Recommendations to improve by Architect B2:

- Communication

Client C5		
	Composition	Husband and wife (+baby)
	Profession	Entrepreneur in construction
	Prev. Exp.	2 Apartment renovation

Client SQ assessment based on: creativity, communication, reliability, product

Client SQ quotes about project:

- *Choice for architect: "We went a bit out-of-the-box as well, so it was that's why we went with Architect B because Architect B are very creative".App use: And I find it a big disappointment in the construction phase that there is no app used.*
- Project manager: *"we were very lucky because we got on really well with the project manager. He was very passionate about his job and that was very successful in our feeling in the whole process"… So he very often came and he was very often interacting directly with the people which made a lot of, I think lot of follow up going automatically.*
- Education: *"The whole timeline was super clear to us from the start to the real moment we started digging. But we were happy with the process and we and we needed some time as well in certain ways. But I think in general we're very happy the way the project went."*
- Debrief: *"Once you're in your house and they're moving to the next project and you need to chase people, chase people, chase people. And that is a little bit disappointment pointing of this industry, but it's not the first time and I think 90% of the projects is the same… I think the biggest improvement to make is the handover process and the end evaluation like the last step".*
- Managing expectations: *"What was a good thing of this architect was that first of all, the budget they gave at the start was a bit widely calculated… because there was increase of prices on process. So, the disappointment was not so big because we thought the budget was bigger. Second, the architect said its gonna cost you a year to construct. In the end, we managed to do faster, so I think it's also the creation of expectations that was very well managed by this architect."*

- Previous experience: *"They'll do a really good job and they are much better than previous experience with other architect within other architect"*
- Gap: *"I think the gap between our expected them, what I got is really small. Because in general. Like we build our Dream house. And the end of the day, it's about the result."*
- Quality*: "Nobody wants to pay a lot too much for his construction. So, we all want to have the cheapest price. And we all put a lot of pressure on companies… So, the difficulty for this industry is, we all wanna build the cheapest house... but we expect the maximum quality, the maximum service, that's not possible…. We worked with certain companies where we knew there were or maybe a little bit expensive another one, but we knew that the quality was gonna be good. So that's for me was a big, big impact on everything.*

Client Recommendations for project:

- PM to save money, mistakes and headaches.
- Use an application.
- Take care of the customer from A to Z (catch up on customer after completion).

Other Client Quotes:

- Application*: "If you use an application … you will have people on the building site with the tablets. We're gonna do the… weekly meeting with the project manager and all the subcontractors. You're gonna go through everything and you're gonna make your notes on the on the iPad, on the tablet, and you'll be able as a project manager, to immediately send out the report of the meeting by the end of the day. What happens today, everything is written down on paper. And then the project manager is gonna go back to the office and doesn't have time for it. And what happens is the day before the next meeting, so six days after the previous meeting, the report is sent out to every company. So you're gonna remind people about what they need to do the day before the next meeting… But if you don't have a good project manager or let's say don't have project manager, that's there all the time, I think it's better to use a certain software. And also to defend yourself, like if you send the weekly report, yes, that's a proof of what you sent to the company. But if you have a certain app, the company can also say, like in the app ohh, I need to do this, oh yeah, oh yeah, Cool. And then when it's finished, you can even make a picture. You say I've done the job."*
- Throw the ball back: *"My wife was on top of everything, so whenever we got a question, we tried to respond within 24 hours unless we didn't know the answer. Then we sometimes struggled. But let's say 9 out of 1010 questions, we tried to get back within 24 hours. And in in construction, if you throw the ball back as soon as you can, that doesn't leave much time for for finding excuses because it full of excuses".*
- Debrief: *"But that's why I think there is improvement to make is make sure the customer. Is well taken care of from A-Z start to finish. And I think that's also where money is lost on each side. It's. Because now you need to pick up things. It costs time for everyone. But even I think for the suppliers it's a shame because they think sheet I need to go there, but it's extra time you lose."*
- *Knowing what you want: "I think I've been very lucky that we knew what we want. I know other people that are constructing and they do not always know what they want. And then. It goes often wrong because if you choose suddenly you change your mind. That doesn't help."*

- *Gap: "actually the gap of the previous process has an impact on the gap of the next process… once there is a gap somewhere, the gap is difficult to close in the next phase. So…the goal of an architect should to try to keep the gap small from start to finish, and then everyone is a winner."*

Unit 6

Recommendations to improve by Architect C1:

- Debrief

Client 6		
	Composition	Wife & husband (+(grand)children
	Profession	Retired business owner
	Prev. Exp.	2 Commercial construction client

Client SQ assessment based on: lack of issues, comparison in communication with experiences in own professional career.

Client SQ quotes about project:

- Trust: *"She was very considerate of our requirements. I trusted her ability to meet all structural building code requirements. I didn't get involved in any of those sort of things.… we got on really well…We really didn't have any issues at al."*
- *Personality: "I knew she (Architect C2) had a very strong personality, but that didn't worry me because I had too. So it was fine."*
- *Design: "So it just sort of evolved quite seamlessly really. Architect C2 got what we were trying to achieve… "I'm not creative. I'm really practical. And I'll have a real sense of what I like and don't like, but I have to have someone as I said earlier, actually get out of my head what it is that I like.To that extent, she did an amazing job."*
- *Availability: "Architect C1 was available when we when necessary, which was great."*
- *3D: "it was interesting, as a build went on once you see something that's a bit more 3 dimensional a lot of things make more sense as well then so it's very easy to look at flat plants and we did have some 3D imagery done which made me relax that it was gonna look like I wanted it to look"*
- *Skill: "But the project actually went remarkably well, all things considered, yeah. But once again, it comes down to the quality of the architects. The attention to detail that they've got. The building firm and project management obviously, and the trades."*
- *Special job: I think one of the things that I really enjoyed about the project? Was something that I also enjoyed within our business. Which was. And as I said before, I don't have any qualifications. What I found with the builder and the trades was, I realized this was a special job … If I thought, there was a better way of doing something. Or a more up to date or better product, all of the trades were happy to bring that to the table and then have that discussed. I was very happy to allow that to happen. And I think that we've got far superior product because of that."*

- *Relationship: "We got on well from the start. ARCHITECT C2 knew that I was very direct. She's very direct and. We didn't really have. We had no cross words. We got to the point where we were we we we were and with about the builder that was on site. Uh, you know we we actually got to the point where we took it torment each other…Well, the interactions with the architect were great. I believe we have a friendship over and above a professional relationship."*
- *Adjustments: "Any practical suggestions that we saw are needed to be changed on on the on the fly, so to speak. And she and always reacted positively to that because she could see. She could say the practicality."*
- Qualitative collaboration: *"I think between having a a good positive. Proactive client, a really high quality proactive builder and same for the architect. You know, I think the end result sort of speaks for itself. It wasn't just wasn't just one person on their own. It was, you know, it was the, the sum of all the parts and then great trades as wel."*
- Soft skills: *"ARCHITECT C1 had a great or has a great manner as well, she's quiet but once again, like ARCHITECT C2, she's very has great attention to detail"*
- Project manager: *"And the project manager, because he was he had worked with ARCHITECT C2 before on commercial jobs and was and actually was a very experienced project manager and had a great personality as well…So he…insisted on regular site inspections and sign offs by all the relevant engineers. And that process was managed as was a commercial build. Which was really good because it created a discipline… All the trades knew that there was going to be, you know, regular inspections of their work*
- Stress: *"most people say when they build a house, it's the most stressful thing they ever did in life, while I actually found it relaxing compared to my everyday life at the town."*
- Covid Support: *"I was definitely very appreciative of the of the genuine personal support and professional support that CLIENT C6B and I were given during the sort of initial stages of the COVID shutdown"*

Client Recommendations for improvement:

- Adoption of newest technology

Other Client Quotes:

- *PM: "I think they're having an independent project manager who actually does understand building is really important because they can either play good cop or bad cop, and the client can stand back. And I I think that that's really important, but I don't if you don't have a project manager who actually physically understands the job like to you know, the trades then that's not going to work, but because I had one that was highly skilled the discipline was just there and that there wasn't ever a need for anybody to play good cop, bad cop, because it was just all good cop all the time. Because everybody understood the rules of engagement."*
- *Hollistic view: "But that's I think that's a mistake that some people make. By just assuming that architects are practical and sometimes I don't think they are. They have these great design ideas, but you've gotta have a balance between practicality and being able to design. I think it's important that architects have… have a holistic view rather than just a design view."*
- *Spend time: "You do need to spend time just pouring over things and being involved in the process… and listen to the input of the trades."*

- *Sum of parts:* *"You actually achieve more by working together as a team. And it's the sum of all the parts. And I think this the success of this property and the look and the feel of this property. The comments that I get from people didn't just come about because we had lots of money, that came about because lots of people had lots of skill and took a hell of a lot of pride in their job."*
- *Adoption of technology:* *"Some clients, have no idea what they want. And I think they know they won't till they see and then they go. I don't like that after it's already built. So yeah, that's a hard one, but being able to listen and actually perhaps give the client time To get the head around it. And I think with modern technology with, you know, with the 3D imagery and all that sort of stuff, which is what we're using for the port LOCATION, you know, I've got a little thing and I can look inside the rooms and I can see the concept and.You know, I had the house upside down the other day, which was really clever of me. But you know that that actually for people to be able to sit With the concept plans to start with and and just imagine how they will interact with them. I think is really important. So the adoption of technology really help those people who don't have vision."*
- *Communication:* *"It it is very important to have clear communications. And I don't think people should rush. I think people should be able to take their time in thinking through the plans… And I think it's really important that there's a there's actually a written trial, but you can't get away from having, you know, verbal communications. I think that's really important to establish a relationship. So you need to establish a relationship, but then you need to follow it up, like in any business scenario, you need to follow things up in writing so that it's very clear as to what was agreed. And you know what? The time frame, what the expectations are for time and scope and costs and all that sort of stuff. So I don't think that ever changes you know you need to talk, you need to communicate, you need to listen and you need to document those conversations."*
- *Personal connection:* *"For a lot of people building a home, even wealthy people building a home, If it's a home its suddenly really important to them. And it's more than just a building, so there has to be a connection. And if they don't connect with the architect they're not going to get the best result. So there needs to be, you need to feel that you can trust them and you need to feel safe. Because to all intents and purposes, for a lot of people, it's the biggest amount of money a lot of people will spend, and that money's hard to come by, so they need to make sure that they're going to get the result that they want at the end. And like and, I believe I believe we did."*

Unit 7
Recommendations to improve by Architect A1:

- Debrief

Client 7		
	Composition	Husband & wife
	Profession	Graphic designer in advertising
	Prev. Exp.	1 Renovation of interior

Client SQ assessment based on: Product (experiencing the space) & Pricing (Built for budget)

Client SQ quotes about project:

- Attention to detail: *"Architect C1 was always just super attentive, like, even on site, she'd always have an iPad with a taking notes, making notes about things that we suggest, like she never missed anything. She was her attention to detail was pretty amazing."*
- Treatment: *"And so she probably stayed the longest out of all of them and to chat and kind of get to know us, which is really nice. Like a few of them were big, I guess the project maybe wasn't big enough for them or. Budgets weren't big enough or something, but she just kind of got it and treated us like we were her main client, which was nice."*
- References: *"So I guess from our design and marketing background, we knew we needed to have a bit of a brief to give her. Umm, which we gave her once we met with her. And then she in turn gave us back some really cool references based on what you've shown us, and this is extending it further this is how I think it's gonna work and look."*
- Changes: *"the only main thing we changed, I think the roof… Well, she's great at just accommodating what we changed our mind to."*
- Commitment: *"But the fact that she had a iPad and was just doing it all right there in front of you. You knew she wasn't going to miss anything. In terms of any other techniques, she was like, just super on it with all the getting the project off the ground. So you know talking, putting everything through counts or putting everything through. Permits that we needed. So she was all over that kind of stuff because I think a lot of clients do that themselves. But yeah, she was all over it"*
- References: *"She showed us lots of great references like whether it be on Pinterest or she had like would create mood boards. To come up with an idea of how the room would look. So that was really good."*
- Aftercare: *"She'd been contact for the like, you know, a week or two after saying, let me know. And even the builder themselves they were like, let me know there's always gonna be that need to be adjusted. So they're both really responsive. It wasn't like the projects done, they're done…I think we wouldn't work with anyone else. Now we've got to trust with the architect we like."*

Client Recommendations:

- Maybe communication (later on in the project)
- Update on what the invoice was going to be

Other Client Quotes:

Communication: *"I guess the communications are super important, but that's probably more with the builder as well as the architect…like in person or over the phone because I think things get lost in e-mail. So Architect C1's good."*

Extra's: *"If we had the budget, we would have loved to get 3D drawings or. Yeah, actual mock up that. You can, like virtually walk through and. Yeah, if that would have been ideal. And they she offered that kind of stuff, but. We just had to cut costs."*

Invoice: *"if I was being super picky like super, super picky, you know, … each month you know would get invoiced each month, but there was no like you're getting close to the amount of hours you've spent kind of thing. It's it was just here's the invoice of how many hours would spend. So, you didn't know before the fact."*

D: Textual description of cross-comparison

Interactions

This chapter compares the standard interaction process for the three participating architects.

Process documentation. Architect A uses a document to explain their process to their client. They have a multipage file, which includes detailed textual explanation about costs, key activities, products, actors and other factors of influence. Architect B has included most of this info into one figure. The figure is used to give a quick but complete oversight of the project. It includes the same elements as with Architect A. Yet this document also gives an indication of the length of phases. Architect C has no formal document in use that explains the interaction process with their clients.

Fee-structure. Both Architect A & C mostly use hourly base fee structure, with an upper and lower limit. This will be defined at the start of the project adjusted along the process if needed. Architect B works with a percentage of construction costs, however this percentage deviates per project and is also based on the hours they estimate to spend on the project, because of the complexity. So, all three architects calculate their fees based on the amount of work that is needed.

Environment. All architects prefer in-person meetings at the beginning of the project and at key presentation moments. Yet they say all to be very flexible to adjust this according to the needs of their clients. The adjustment based on the needs of the clients is thus common.

Involvement. The involvement of clients in the project is not that clearly described in the interview transcripts. All three architects talk about the need to educate their clients during the process. This implies that a client must be involved to a minimal extent.

Actors: Architect A typically have Architect A3 involved in the early phases. After this start a project lead gradually takes over the initiative and becomes the main contact person for the client. In construction documentation Architect A4 takes over the project, and during construction typically a construction manager will be used. Architect B works differently, while at the start all architects are involved to make a small design to increase the options for the client. After this start there will typically be one architects that functions as contact person (also during construction). Sometimes the help of a junior architect (B3 or B4) is used as well. Architect C also has one main contact person for the project, yet Architect C4 is often in charge of the construction documentation phase.

Tools: All architects typically use CAD programs to make their designs and renders to show it to their clients. However, the focus of architect B is mostly on 3D visualisation from the start of the project, in which they want to enable their clients to walk around in their projects. Architect C typically also uses many hand sketches in the beginning phases of the project. Architect A stands out in the fact that they (have worked) work with multiple different design programs.

Soft skills: Architect A3 takes the soft skills of their employees into account when recruiting: *"I think the people we hire all have a similarity in terms of being approachable and you know, friendly and you know, considerate and warm with the clients other than those that we let go."*

Sequence: All architects typically do not deviate in the sequence of the project phases.

Topics: The topics of discussion are mostly guided by what is required to be done in the concerning phases. There appears limited room for deviations here.

Customization

Environment: The interaction environment is mostly varied upon within every project within all three architects. This is mostly rooted in the practicalities of clients. For example, if their clients live far from the office, or whether they must travel a lot due to business trips, often online video calls are used. Architect B stood out in the fact that they use WhatsApp in their day-to-day communication with their clients, because they believe it is easy in use and increase their accessibility for clients. Also, with Client C4 they had more informal lunches on neutral locations. This meeting on a neutral location was also seen with Architect C2 and Client C6, who met at a cidery next to a vineyard. The project with Client C7 stood out for the fact that the project site was only 5min from the office, and thus easily accessible. Architect A3 gave an example that she would move out to a client who due to their disease was not able to come to the office. On the other hand, she described that with client C3 they met often at the office, because they liked to.

Actors: The actors involved typically only varied from the normal procedure of the architects, in the fact that there was or was not a project manager involved for the construction or not. Also in project 6, from Client C6 two architects were involved in client communication, which is not the standard for them. This project also stood out because there were contractors added by the client.

Involvement: The involvement of clients is something that is highly customized. Client C7 for example, or client C1 did not want to be involved in the design that much. Yet, all three architects also had projects where the clients were involved to a larger extent (P2, P4, P6), in which their clients were really embedded in designing and construction as well. Both Client C4 and C6 mentioned that they knew all the names of the construction workers for example.

Tools: The tools that were used were typically not customized from the "standard" working method of the architect. The standard working method or programs in use however differs amongst the architects. Especially for architect A they can use different programs according to architect and client involved. Yet, in following the definition this is not an adjustment from their standard procedure. However, in project P2 mock-ups were used. And client C7 did decide not to include 3D drawings in the design process, to save money.

Soft skills: It remains hard to say whether the implementation of soft skills is something which was customized. Architect C1 states for example: *"So I feel like I listen and then try and use my knowledge to guide the client in a way that I think will work most effectively for them and their particular needs."* Architect A goes even further by explaining that they will select a project lead also based on the different client personalities. Architect B, believes that a more standard approach works best here. They emphasize that being pro-active, remaining transparent and communicative along the process is important no matter what type of client.

Client types: Architect B1 recognizes the differences between clients in terms of (presence or lack of) experience. Yet, they argue that the clients' personality is more important than his experience when trying to educate them. Furthermore, they argue that with a client who knows what they want are easier to work. Architect A3 also explained that the main differences in clients are their experience and their knowledge of what they want. Architect C1 is agreeing to Architect B1 that personality is crucial in collaboration: "you just try to pick those clients who are like-minded."

Customization: All architect see benefit in customizing. Architect A3 thinks clients will really appreciate it if one adjusts the process according to their needs. Whereas Architect B1 argues that customization is mostly related to money, Architect C1 argues that with smaller practices there is less resources and time available, so possibilities for customization are limited.

Standardization: Architect A1 emphasizes that there is also a benefit in standardisation, while there is a core approach of good and transparent communication and that will work with every client. This is also the view of Architect B1. All architects, however, do think customization in some parts of the project will help to increase the satisfaction of their clients.

Improvement: Architect A3 explained that they try to improve their services, for example with lessons learned presentations by their employees. Yet both, Architect A3 and C1 also think they can improve by having a document constructed about their processes in relation to the different types of clients. Also, they think that there could be lessons learned from post occupancy evaluations. Architect B1 mostly thinks he can improve knowledge about budgeting.

Service Quality

In this chapter the assessment and contributors to service quality are discussed.

Assessment: In assessing service quality clients typically refer to the standard dimensions of the quality of the product, time and budget. Also, when asked about the service quality dimensions (reliability, responsiveness, empathy, assuring and tangibles) all clients were aligned in the fact that these were only positive. This could imply that either the service in those projects was all perceived very qualitative or that the dimensions are not the appropriate tool for measuring service quality in this type of processes. In assessing the service quality Clients B2, B5 and B5 also referred to their previous experiences. Other than these standard dimensions, the following elements were reported to contribute to the perceived service quality of clients. For every element positive statement and negative statements are discussed together with recommendations by both the architect and the clients on how could be improved.

Fee structure

The opinions about the fee structure are both positive and negative. Client C2 liked the hourly based fee structure because they think the work of architects is incentivised by that. Client C1 doubts about this structure because it is bounded to the length of the project as well, which might increase the costs if a project is delayed.

Financial consultation

Multiple participants think the financial consultation of architects can be improved. To start client C1 would like to have a presentation of something within her budget every time they meet. Client C3 even would like the architect to outline when they should or should not spend the cash. Also the architects themselves think budget estimation (A2) and management (B1) could be improved. The opinions about usage of invoices are mixed. Client C2 liked the invoices so she could see the expenses by the architect in a transparent way. Client C7 however, would like the architect to provide some more updates about what the costs of the next invoice will be. Two clients would like the architect to take a more auditing perspective to the contractor as well regarding the costs of things. A real audit of contractors bid by Architect A4 is what Client C3 would have liked. Client C4 would also like their architect A4 to be sharpest pen to the contractor.

Environment

The effect of environment did not arise that much in conversations on service quality. However, for example client C3 was really happy to be able to come to the architect's office and would even like to do this more. However, he understood that that was not possible from the side of the architect. Client C4 liked that they could have unofficial discussions during by going out for lunch as well. Furthermore, client C4 liked that she could meet with the architect and contractors on site as well. This was also the case for client C6 in project P6. Other than that, no surprising statements about location related to service quality were mentioned.

Tools

Client C3 liked the refences of Architect A3, the fact that they could use sketches and that they were able to make mock-ups. C7 liked the references of Architect C1 and that they could save money by only using 2D drawings. Yet, client C4 was disappointed because they expected Architect B1 to use a bit more 3D modelling. Client C5 would have liked architect B2 to use an application, for communication during construction which they did not. Client C6 liked the 3d visualisation of her project because this enabled her to make herself imagine it better. Yet, she thinks her architect could improve further by the adoption of the newest techniques. Client C4 thinks this new technology could also be used to help "green" clients decide in the briefing phase.

Soft skills

The soft skills of the architects were mentioned frequently in the service quality evaluations. Most of them were positive. Client C2 liked the diplomacy of architect A3. Also, client C2 thinks the calm of Architect A3 made them feel everything was under control. Client C3 liked the personality of Architect A3 as well: *"she's quiet, she's not gregarious, she's confident, she would always justify what she's doing, and I wanted someone like that."* He also liked that the architect did not pamper them, he liked that they were decent and respectful. Client C4 liked the pro-activeness of Architect B1 and client C6 liked how considerate Architect C2 was with their requirements. She also liked the direct personality of the architect. Yet, there was also a negative statement by client C4, that disliked the negative attitude of Architect B1 at the start of the project.

Education

Education was one of the most frequently mentioned contributors to service quality. Client C3 thinks architect A3 is very good at explaining and referencing it if he did not understand. Client C4 liked the time schedule of Architect B and found that this contributed to their transparency. Client C5 was very happy with the same timeline, as that made the process very clear for them. Only client C1 mentioned that Architect A could improve by educating their clients more.

Managing expectations

Related to education is the management of expectations. Client C4 liked that Architect B1 managed her expectations, client C5 was happy about the widely calculated budget and time schedule. Also, in relation to this topic C1 thinks architects can still improve.

Communication

The communication was also one of the most discussed elements of service quality. Client C2 liked the communication skills of Architect A3 (listening, asking, suggesting). Client C4 liked the weekly meetings and reports that Architect B1 provided to her. Still architects think they can improve their communication (A3 & B2), and one client think the communication later in the project could have been a little better. Client C7 thinks things get lost in email. So personal communication is key he argues.

Construction

Related to the previous comment are the service quality statements about the construction. Many see room for improvement in this phase. Client C4 for example felt that they at some moment they doubted whose side the architect was on, because they thought the architect was not of the sharpest pen to the contractor. Also, when asked about improving clients C1 and architect A3 think the collaboration with the builder can be improved. Architect A1 thinks they could improve by giving construction updates to the client. Architect A2 think they could improve by arranging the communication of construction via the architect. On the other hand, client C3 mentioned he liked the builder he worked, with and thinks that that can be a good indication of the later collaboration.

Project Manager

Another element that was mentioned frequently was that the use of a project manager (could) adds to the service quality. Surprisingly this was not only mentioned by architects and clients that had worked with one. For example, client C5 liked that they used a project manager, that was very passionate and experienced. Client C6 also liked their project manager, to play the good cop (because the bad cop was not needed due to the clear rules of engagement she argued). Surprisingly both Architect A1 and Client C3, who did not work with one mentioned a project manager could be a useful improvement.

Collaboration

Client C4 was very happy she was involved in decisions. Client C6 was of the same opinion since she really liked the collaborative atmosphere in her project. She argued because everyone knew they were working on a special job, they felt open to suggest or discuss if there were better solutions for certain issues. She thinks she got a far more superior product because of that collaboration.

Standardisation

Client C2 liked standardized billing, presentation boards and design programs.

Briefing

In the briefing phase client C3 enjoyed the process because of the "big picture stuff". Client C2 thinks their architect could improve by being a little less detailed up front. They argue time could be saved, by pushing back client a little sooner (C2). Also, Client C4 thinks their architect could improve here by trying to understand the expectations of the customer even better.

Debrief

Client C7 liked the aftercare of Architect C1, while client C2 and C5 think the architect can improve by doing a debrief. Architect C1 is of the same opinion by thinking she could improve by having post occupancy evaluations.

Skills

The skill of the architect was also something that was mentioned quite often. Client C5 thinks architect B is very creative. While client C6 liked the fact that Architect C2 was able to get out of her head, what she liked. They also liked the attention to detail their architect had. Client C7 also liked the attention to detail and commitment of architect C1.

Other

Client C3 thinks their architect could also improve by embedding more sustainability in their design, and by having a more formal handover as the end of the project.

Industry

Other than the statements related to the service as provided by the architect clients also had recommendations how architects or the industry could improve in general.

- Client B5 thinks that the sooner you communicate, the less excuses an architect has not to be able to do something. Furthermore, they advise architects to use an application that is focussed on construction to improve communication.
- Client B5 also thinks that in the construction industry people do not want to pay too much money, which negatively impacts the quality in the end and make people work inefficient.
- They also think clients should know what they want to have a successful project. Client C4 sees a solution in digital tools to help these types of clients.
- Client C1 feels sheepish about reversing decisions due to the work that architects have spent.
- Client C1 & C3 think architects like to design unique houses and do not want to be the architect's guinea pig.
- Client C4 thinks architects should be more interested in people and believes this is something that should be included in their education as well.
- Client C6 thinks architects are often not practical, and that people tend to overestimate this in architects. She also thinks the personal connection is needed to get to the best results.

E: Reflection

By writing this reflection, the process of conducting research on this thesis project has nearly come to an end. This same accounts for my studies at TU Delft. In this chapter I will take the time to reflect on the product, process and planning that are linked to this research and it's relation to my other studies performed.

Product

Methods & approach

For a first exploration this method of explorative case study was the most appropriate. However, to assess whether there is a relationship and how exactly more research, and other methods might be more successful. Thereby, I think that this first exploration of mine can be a very useful starting point to further research on this topic. For example, the dimensions of customization and the contributors to service quality.

I think the findings of my thesis do not necessarily hold spectacular or surprising results. Most people will have a gut feeling that if services are adjusted to the people that take that service, that will be appreciated by those service takers. Since the reliability of my research and findings are limited due to the qualitative and explorative nature of the research, the applicability of the results is very limited. Yet, I realized as well, that by conceptualizing customization and linking it to service quality I might have been one of the first to explore this specific topic, especially in the field for private residential projects.

Transferability of results

Since a new conceptual model for analysis was used, the transferability of results to existing frameworks is limited. Yet, as a new starting model my framework could be used in multiple project settings, which involve both clients and architects.

Relationship studio, track and master

The research also enabled me to get back on the subjects from the Design & Construction Management course. I liked this course a lot. An example is the importance of having a thorough and well-defined brief, before starting with design and construction, as the costs of change are way higher later in the projects. Also, the iron triangle (time, costs, money), the use and work of a project manager and the flow of information during a project (as I learned from Winch (2010)) were all concepts that either I could use in my literature study or I found in the practice of my cases.

The creation and management of services is especially deemed important in the case of private residential projects since the situation of the user can be problematic in these projects. Private residential projects have not previously been widely researched. In both the strategic and management perspective this topic is well aligned within the field of Design & Construction management and in the master track of MBE, since it searches for a solution that is related to the work of a project manager. Also, in the scale of the projects and extent of architectural innovation and designs, this research was closely related to the track of Architecture, although it did not focus on the design itself, but more the process that enables it, which makes it more a MBE thesis.

Feedback

During the conversations with my first tutor Herman, I realized that closing the gap in service quality might not always the goal of an architect, as they might thrive by having a balance in the benefit of customization for them and the resources that are required to enable this customization, they seek for appropriate tools for managing this gap. I also realized that standardisation could also be beneficial for certain aspects of the project and process. Lastly, the relationship between process and products was something my tutor asked me frequently about. The distinction between these both is something I first thought only to be focussing on the process. Yet, as for example the responses of participants on my question on processes showed, people often refer to product and process interchangeably.

The main feedback during my p2 presentation was that my concepts are hard to measure and define. This was something I tried to implement in my continuous work, yet it has also proven to be one of the limitations of my research. However, I believe this is also inherent to the novice and exploratory nature of my research and the limited amount of previous research on the topic.

Process

I think I liked the process more, than the product. I expected this would also be one of my findings. As in, that the process is more important than the end product as a contributor for service quality. Ironically it is not the journey that was deemed important by the clients, while they mostly referred to the time, cost, quality triangle when being asked about service quality. Service quality remains an opaque topic, especially in private residential projects.

Although I liked the process, it has also proven to be very stressful for me. For the first time in my life, I worked so long on such complex issue, with so little support (from students or teachers). I waited sometimes a bit to long for feedback before continuing, because I was afraid for making mistakes. Considering my study, I am also a person that if continuously doubting whether what I am doing is the right thing to do, this has retained me from for example starting with interviews, as I wasn't sure of what to ask. This also resulted in me making too much, and too direct questions for the interviews itself. Where-as a big lesson I learned from my tutor Paul was that a natural conversation about a project, with "customized" questions along the way may prove to be way more successful in terms of aggregating interesting findings.

During analysis I was faced with the same issue of uncertainty. This resulted in changing my codes and themes, multiple times, so I had to do all the work, for the awful lot of data again and again. It thanks my dad and my girlfriend for sometimes providing me the mirror that it would be better to just make a decision and run with it.

This process, however, was something that really made met get to know myself on a level I have not had before. It is now with retroactivity that I realize that the challenge of the thesis is not only related to the difficulty of the project, but also to the skill of knowing and managing yourself.

Research & Design

The relationship between research and design could be considered quite close. For example, I got the feedback that I should try to conceptualise the related literature into my own integrative framework. I have to say that this was something I have been struggling with up until the end of my report, since my research concepts are not well related to one-another and I found it challenging

to assess which of the many external influences were to be included in this model and which not. However, I did "design" not only my research itself, but also the framework I used to analyse the customizations and framework to assess the service quality.

Ethical dilemma's

There were some ethical dilemmas in the research.

First I had to make a decision on how to ask questions in the interview, should I do it more directly, risking to steer the answer, or should I try to keep the conversation open and find related concepts based on analysis. This was also an ethical dilemma for me because I figured that I might steer the answers of people by asking them directly and explaining by giving examples when clients did ask for further explanation of a question. This also impacted the validity of my research negatively. Also the transcription entailed dilemmas for me. Since I had too many recordings to transcribe 100% of every interview, I deliberately choose to transcribe the parts I deemed important for the research. I am conscious that I thereby might have steered the outcome of the research, yet I have done everything at my proposal to prevent this.

The biggest ethical dilemma for me was the analysis of data. Determining whether an adjustment was a customization or not, I tried to rely on direct quotes out of the interview. However, since a customization by the definition must both be a deviation from the standard approach of the architect and an adjustment to the needs of the clients, it is hard to grasp what statements can be considered a customization and what not. In determining so I am aware that my researcher bias, and foreknowledge from previous conversations with participating architects might have influenced my capabilities to be able to find customizations that otherwise would maybe not have been found.

Planning

Especially the planning is something that requires self-knowledge since there are only a few deadlines over the year. The progress that needs to be made in between is all determined by the goals you set for yourself. I learned to divide the big pile of work in smaller pieces, which helped me plan and oversee the big amount of work that was required. This might seem very straightforward, yet for me this has proven to be a problem in my previous studies.

In the remainder of my graduation period, I will make the last improvements on the spelling and grammar of the report, invite the participating architectural offices and clients to my P5 presentation, but mostly focuses on the making a presentation that will show my research project in a transparent and elegant way. Depending on the feedback from the p4 presentation other elements will be adjusted if needed.