Antecedents of Customer Loyalty in the Manufacturing Industry

HENLEY BUSINESS SCHOOL

THE UNIVERSITY OF READING

Degree of Doctor of Business Administration

Marketing and Reputation

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January 2023

Declaration

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Acknowledgements

Primary thanks are due to my first supervisor, Dr. Roger Palmer for his wisdom, invaluable insights and above all his patience and kindness. Likewise, thanks to my second supervisor, Dr. Melisa Mete of Henley Business School whose valuable comments were extremely helpful and thought-provoking.

Dedication

To my family. Their love and support are the foundations that make everything else possible.

Abstract

This thesis concerns the study of customer loyalty and its antecedents in the UK manufacturing sector. It adopts a critical realist perspective to the study of customer loyalty, locating the concept in the relationship marketing and social psychology literatures. The findings generated by the literature review and the results of an exploratory qualitative study leads to the development of a conceptual framework in which functional, social and emotional relationship value, customer satisfaction, and moderator variable, relationship age, are believed to influence the level of customer loyalty in the manufacturing industry.

The conceptual framework is tested empirically using a quantitative survey design in the context of the UK manufacturing industry. Data is analysed through application of the partial least squares (PLS) structural equation modelling technique.

From a theoretical perspective, the study makes a number of valuable contributions to the relationship marketing literature. The study confirms the importance of social and emotional relationship value aspects on customer satisfaction and loyalty outcomes in the manufacturing industry. The findings offer a new theoretical perspective of the role social and emotional value play in creating loyal customers and the role emotional value performs in buyer's feelings of satisfaction in the B2B domain. The findings also suggest that customer satisfaction acts as a partial mediator in the relationship between customer value and customer loyalty. Moreover, a new theoretical concept of emotional value featuring frustration and human touch in addition to interpersonal relationships is also evidenced from the research results. Furthermore, the study also shows that the theory of consumption values can be applied to the B2B manufacturing domain.

The results propose that behavioural loyalty can be expressed through customer satisfaction, and functional and emotional elements of relationship value. Whereas, attitudinal loyalty can be conveyed by customer satisfaction, and functional and social components of relationship value. These relationships are in turn also partially mediated through customer satisfaction. The results also indicate that all three dimensions of functional, social and emotional value influence customer satisfaction outcomes.

Overall, the study provides recommendations on how to maximise customer loyalty through strategic combinations of relationship value. It also provides guidance on how to improve customer satisfaction through different elements of relationship value in the manufacturing industry. From a practical viewpoint, the research study findings offer suppliers important guidelines and a toolkit for establishing, developing, and maintaining successful relationships with their customers in the manufacturing industry.

Contents

Declaration ii
Certificate of readiness to be included in library iii
Acknowledgements iv
Dedication v
Abstract vi
Contents vii
List of figures xiii
List of tables xiv
List of abbreviations xvi
1 Introduction 1
1.1 Background to the study 1
1.2 Aim and objectives of the study 3
1.3 Contribution of the study 5
1.4 Structure of the thesis 5
2 Literature review – customer loyalty in B2B 10
2.1 Introduction and overview 10
2.1.1 Structure of the literature review 10
2.2 Concept of loyalty 12
2.2.1 Overview 12
2.2.2 Concept of loyalty within relationship marketing 12
2.2.3 Other bodies of theory emerging from the concept of loyalty 13
2.2.4 Critique of current research on customer loyalty 15
2.2.5 New perspective on customer loyalty 17
2.3 Loyalty and of its dimensions 18
2.3.1 Overview 18
2.3.2 Behavioural loyalty 19

2.3.3 Attitudinal loyalty 19

2.3.4 Cognitive loyalty 19

2.3.5 Composite loyalty 20

2.4 Definitions of customer loyalty 20

2.4.1 Overview 20

2.4.2 B2B loyalty definitions from literature 20

2.5 Theory of reasoned action 25

2.5.1 Overview 25

2.5.2 Origins and conceptual framework of the theory of reasoned action 25

2.5.3 Scope, applications and limitations of the theory of reasoned action 26

2.5.4 Critiques of the theory of reasoned action 27

2.5.5 Other models derived from the theory of reasoned action 28

2.6 B2B loyalty in the UK manufacturing industry 31

2.6.1 Overview 31

2.6.2 UK manufacturing industry 31

2.6.3 Customer loyalty relevance in the B2B manufacturing industry 32

2.7 Models of customer loyalty 34

2.7.1 Overview 34

2.7.2 Mediated impact model 35

2.7.3 Relationship value, satisfaction, trust and commitment model 37

2.7.4 Customer loyalty model in a cluster environment 38

2.7.5 Relationship-value-based antecedents of customer loyalty model 40

2.7.6 Customer value, satisfaction, switching costs and loyalty model 42

2.7.7 Customer satisfaction influencing customer loyalty model 45

2.8 Measurement of loyalty 47

2.8.1 Overview 47

2.8.2 Measurement indicators of the loyalty construct 47

2.8.3 Type of scale and literature source 48

2.9 Antecedents of customer loyalty 63
2.9.1 Overview 63
2.9.2 Relationship quality 64
2.9.3 Customer satisfaction 65
2.9.4 Trust 67
2.9.5 Commitment 69
2.9.6 Relationship value 70
2.9.7 Functional relationship value 76
2.9.8 Social relationship value 77
2.9.9 Emotional relationship value 78
2.10 Moderators 80
2.10.1 Overview 80
2.10.2 Duration of the relationship 80
2.11 Conclusion and summary 81
3 Methodology 83
3.1 Introduction and overview 83
3.2 Theoretical aspects of research design 83
3.2.1 Overview 83
3.2.2 Critical realist philosophy 85
3.2.3 Research methods 87
3.3 Research approach 89
3.3.1 Overview 89
3.4 Data collection and analysis process for stage 1: qualitative study 91
3.4.1 Overview 91
3.4.2 Data analysis process for stage 1: qualitative study 94
3.5 Data collection and analysis process for stage 2: quantitative study 97
3.5.1 Overview 97
3.5.2 Data analysis process for stage 2: quantitative study 100

3.6 Summary and conclusions ... 102
4 Qualitative study results, conceptual framework and hypothesis development ... 103
4.1 Introduction and overview ... 103
4.2 Exploratory qualitative study results ... 104
4.3 The research process for generation of conceptual framework ... 123
4.3.1 Step one: Units ... 123
4.3.2 Step two: Laws of interaction ... 125
4.3.3 Step three: Boundaries ... 127
4.3.4 Step four: System states ... 128
4.3.5 Step five: Hypothesis generation ... 128
4.4 The research instrument ... 136
4.4.1 Overview ... 136
4.4.2 The research instrument and key principles ... 136
4.4.3 Functional relationship value ... 140
4.4.4 Social relationship value ... 141
4.4.5 Emotional relationship value ... 141
4.4.6 Customer satisfaction ... 142
4.4.7 Behavioural and attitudinal customer loyalty ... 142
4.4.8 Classification variables ... 143
4.5 Psychometric properties of proposed research instrument ... 143
4.5.1 Overview ... 143
4.5.2 Reliability ... 143
4.5.3 Content validity ... 144
4.5.4 Construct validity ... 144
4.6 Psychometric status of the constructs ... 145
4.7 Summary and conclusions ... 150
5 Quantitative study results and hypotheses testing ... 152
5.1 Introduction and overview ... 152

5.2 Data collection results, data preparation and descriptive information ... 152
5.2.1 Overview ... 152
5.2.2 Missing data ... 152
5.2.3 Response patterns ... 153
5.2.4 Outliers ... 153
5.2.5 Data distribution ... 154
5.2.6 Demographic information ... 154
5.3 Assessment of the conceptual framework ... 157
5.3.1 Overview ... 157
5.3.2 Sample size ... 157
5.3.3 Specification of the model ... 158
5.3.4 Stages of analysis for the outer and inner models ... 159
5.3.5 Assessment of the measurement model ... 160
5.3.6 Common method bias ... 162
5.3.7 Assessment of the structural model and hypothesis testing ... 163
5.3.8 Testing the research hypotheses ... 164
5.3.9 Additional testing of the conceptual framework ... 168
5.4 Summary and conclusions ... 171
6 Discussion and conclusions ... 172
6.1 Introduction and overview ... 172
6.2 Discussion of research findings in regard to research hypotheses and literature ... 173
6.2.1 The development of customer satisfaction ... 173
6.2.2 The development of behavioural loyalty ... 175
6.2.3 The development of attitudinal loyalty ... 178
6.2.4 The influence of the duration of the relationship ... 181
6.2.5 The mediating role of customer satisfaction ... 182
6.3 Broader implications of the research findings ... 183
6.3.1 Overview ... 183

6.3.2 Theoretical implications 184

6.3.3 Practical implications 189

6.4 Limitations and suggestions for further research 191

6.5 Conclusions 192

Appendix A 194

Appendix B 196

Appendix C 210

Appendix D 211

Appendix E 216

Appendix F 217

Appendix G 222

Appendix H 225

Glossary 227

References 228

Index 262

List of figures

Figure 1.1 Framework of Research Activities 9

Figure 2.1 Theory of Reasoned Action 26

Figure 2.2 Theory of Reasoned Action and expanded components 29

Figure 2.3 Theory of Planned Behaviour 30

Figure 2.4 Mediated impact model 36

Figure 2.5 Relationship value, satisfaction, trust and commitment model 37

Figure 2.6 Customer loyalty model in a cluster environment 39

Figure 2.7 Relationship-value-based antecedents of customer loyalty model 41

Figure 2.8 Customer value, satisfaction, switching costs and loyalty model 43

Figure 2.9 Customer satisfaction influencing customer loyalty model 45

Figure 3.1 Steps in a critical realist approach to testing theories 88

Figure 3.2 Sequential design with qualitative findings feeding into quantitative phase 91

Figure 3.3 Interview data collection procedure 93

Figure 4.1 Conceptual framework and hypothesised causal relationships H1 to H13 126

Figure 4.2 Theory of Reasoned Action applied to conceptual framework 127

Figure 5.1 A simple path model 159

Figure 5.2 Conceptual framework and supported hypothesised relationships 165

List of tables

Table 2.1 Definitions of B2B loyalty by dimension 23
Table 2.2 Definitions of B2B loyalty by dimension (2) 24
Table 2.3 Review of B2B customer loyalty studies 50
Table 2.4 Review of B2B customer loyalty studies (2) 51
Table 2.5 Review of B2B customer loyalty studies (3) 52
Table 2.6 Review of B2B customer loyalty studies (4) 53
Table 2.7 Review of B2B customer loyalty studies (5) 54
Table 2.8 Review of B2B customer loyalty studies (6) 55
Table 2.9 Review of B2B customer loyalty studies (7) 56
Table 2.10 Review of B2B customer loyalty studies (8) 57
Table 2.11 Review of B2B customer loyalty studies (9) 58
Table 2.12 Review of B2B customer loyalty studies (10) 59
Table 2.13 Review of B2B customer loyalty studies (11) 60
Table 2.14 Review of B2B customer loyalty studies (12) 61
Table 2.15 Review of B2B customer loyalty studies (13) 62
Table 2.16 Dimensionality of relationship value 74
Table 2.17 Dimensionality of relationship value (2) 75
Table 3.1 Contrasting Implications of Positivism and Social Constructivism/Interpretivism .. 84
Table 3.2 Stages and processes involved in the qualitative analysis – adapted from Braun and Clarke (2006) 96
Table 4.1 Summary of participant number, background, number of years purchasing experience, industrial sector, size of firm and interview duration time 104
Table 4.2 Summary of thematic analysis named themes T1 to T7 105
Table 4.3 Summary of thematic analysis named themes for functional value T1 105
Table 4.4 Summary of thematic analysis named themes for social value T2 110
Table 4.5 Summary of thematic analysis named themes for emotional value T3 112
Table 4.6 Summary of the findings and resulting actions from the qualitative study 121

Table 4.7 Summary of the findings and conclusions from the qualitative study (2) 122

Table 4.8 Summary of hypotheses set H1 to H13 136

Table 4.9 Scale-items for the research instrument 138

Table 4.10 Scale-items for the research instrument (2)... 139

Table 4.11 Psychometric status of key constructs... 147

Table 4.12 Psychometric status of key constructs (2) 148

Table 4.13 Psychometric status of key constructs (3) 149

Table 5.1 Demographic profile of respondents by UK manufacturing sector 155

Table 5.2 Demographic profile of respondents 156

Table 5.3 Average duration of the supplier-customer relationship and average length of time respondents worked for firm 156

Table 5.4 Properties of measurement model... 161

Table 5.5 Discriminant validity using the Fornell-Larcker criterion 162

Table 5.6 Discriminant validity using the HTMT ratio of correlations.................................. 163

Table 5.7 Summary of research hypotheses 164

Table 5.8 Summary of research results relating to the mediating role of customer satisfaction 169

Table 6.1 Summary of research hypotheses and results relating to customer satisfaction. 174

Table 6.2 Summary of research hypotheses and results relating to behavioural loyalty..... 176

Table 6.3 Summary of research hypotheses and results relating to attitudinal loyalty 179

Table 6.4 Summary of research hypotheses and results relating to duration of the relationship …... 181

Table 6.5 Summary of intended compared to actual contribution to knowledge …............. 188

List of abbreviations

ABM Account-Based Marketing

B2B Business-to-Business

B2C Business-to-Consumer

CB Covariance-Based

CEO Chief Executive Officer

CFA Confirmatory Factor Analysis

CL Alt Comparison Level of Alternatives

CMB Common Method Bias

E Current Relationship

HTMT Heterotrait-Monotrait

IMP Industrial Marketing and Purchasing

PLS Partial Least Squares

R&D Research and Development

S-D Service-Dominant

SEM Structural Equation Modelling

SET Social Exchange Theory

SME Small to Medium Enterprise

TPB Theory of Planned Behaviour

TRA Theory of Reasoned Action

VAF Variance Accounted For

UoR University of Reading

1 Introduction

1.1 Background to the study

This research explores what contributes to customer loyalty in the UK manufacturing sector. The UK manufacturing industry is worthy of consideration as it is an important part of the UK economy (Institute of Mechanical Engineers, 2022). The UK continues to be one of the world's leading manufacturing nations. The industry produces more goods today than it did in the 1980s, and manufacturing provides work for 2.5 million people in increasingly highly skilled jobs (Make UK, 2022). With the manufacturing sector output valued at £183 billion, contrary to common belief, UK manufacturing remains strong, currently the ninth largest manufacturing nation in the world (The Manufacturer, 2022). Manufacturing makes up 10 per cent of UK gross value added (GVA), 51 per cent of UK exports, 64 per cent of business research and development spend and 15 per cent of total business investment (Make UK, 2022).

In the manufacturing industry, suppliers continue to search for ways to differentiate themselves and their market offerings through enhanced customer interactions due to global competition and threats of product commoditization (Eggert et al., 2018). As a consequence, they are devoting substantial resources toward customer loyalty and retention (Russo et al., 2016; Khan et al., 2020). However, customer loyalty can be complex to understand and achieve. In a survey by Bain & Company of 290 executives across 11 countries in business-to-business (B2B) industries including manufacturing, 68 per cent of respondents stated that customers are less loyal than they have been in the past (Russo et al., 2016). Moreover, due to specific characteristics of the industry, the survey also highlights that acquiring loyalty in B2B markets presents its own unique challenges, frequently encompassing complicated channel structures, concentrated buyer communities, large accounts with multiple relationship influencers, and ever-changing perceived value (Michels and Dullweber, 2014).

The report also underlines the significant benefits of achieving B2B customer loyalty, including gaining competitive advantage with impact on profitability (Martinelli et al., 2015; Ramanathan et al., 2017; Almomani, 2019), generation of increased revenues (Lam et al., 2004; Rauyruen and Miller, 2007; Russo et al., 2016), staying longer in the supplier-buyer relationship and referring the supplier to others. Yet despite the considerable benefits of loyalty attainment, if B2B firms in the manufacturing sector do not respond to changing industry and market trends, and build customer relationships on multiple levels they are at risk of decline and being replaced by a more customer focused competitor. This emphasises the critical importance of understanding the antecedents of customer loyalty in the manufacturing industry. However, Russo et al. (2016) acknowledge that despite the long tradition of customer loyalty research, due to the past methodologies used and the complexity of the loyalty construct, significant work still remains to be done in order to develop a better understanding of how firms can achieve customer loyalty.

Prior research on customer loyalty has predominantly used quantitative methods to test B2C models in a B2B context with little consideration for qualitative methods (Bardauskaite, 2014). The literature has highlighted that the effects of loyalty antecedents demonstrate different patterns in B2B and B2C settings (Pan et al., 2012). Research findings found that factors relating to product performance (e.g., customer satisfaction, quality) had a weaker influence on loyalty in B2B compared to B2C (Vlachos, 2021), suggesting that other factors were impacting the purchasing decision of an industrial buyer (Pan et al., 2012). As a result, this research study will adopt a mixed methods approach using both qualitative and quantitative methods. By adopting both qualitative and quantitative research and data, the research study will gain a more in-depth and unique understanding of B2B customer loyalty in the manufacturing domain.

From the literature there also appears to be no consensus on the conceptualisation and operationalisation of the loyalty construct (Pan et al., 2012). Although many researchers agree that the loyalty construct should incorporate both behavioural and attitudinal elements (Rauyruen and Miller, 2007; Čater and Čater, 2009, 2010; Ozuem et al., 2016), previous B2B loyalty studies often view loyalty as a unidimensional concept. As a result, there still remains significant conceptual and empirical gaps in the definition and conceptualisation of B2B loyalty (Vlachos, 2021). Therefore, to fully understand the complex nature of loyalty, this study will adopt a multidimensional approach using both behavioural and attitudinal dimensions (Wangenheim, 2003; Pan et al., 2012; Human and Naudé, 2014).

According to Sharma (2022) empirical evidence is scant on how to describe the multiple aspects of values influence on customer loyalty. The vast majority of previous B2B studies have focused only on the functional component of relationship value (Arslanagic-Kalajdzic and Zabkar, 2017). From the literature, the functional dimension consists of positive values or benefits including the quality of the product and services, and negative values or sacrifices such as price and other-monetary sacrifices (Berry et al., 2002). This research study advances a multidimensional conceptualisation of relationship value consisting of the dimensions of functional, social and emotional value (Fiol et al., 2011). Social value refers to the social perspective of the firm (Fiol et al., 2009). The emotional dimension of relationship value originates from the feelings and emotions that the product or service provokes in the buyer (Fiol et al., 2011).

From current B2B research Arslanagic-Kalajdzic and Zabkar (2017) state that both social and emotional relationship value in a B2B context are rarely analysed. However, the literature offers evidence that emotions play a prominent role in understanding business purchasing behaviour (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). In addition, social relationship value has also been shown to play an important role in complex business relationships (Prior, 2013), which are typical in the B2B manufacturing industry. As a consequence, to develop a better comprehension of how firms can achieve customer loyalty, further investigation of the impact of social and emotional relationship value on customer satisfaction, behavioural and attitudinal loyalty has been suggested by Arslanagic-Kalajdzic and Zabkar (2017) to fill a literature gap, which will be investigated by this B2B manufacturing research study. This will result in a new theoretical perspective of social and emotional value as determinants of customer satisfaction, behavioural and attitudinal loyalty in the B2B manufacturing industry.

Finally, to further understand how firms can achieve customer loyalty, the key moderator variable of relationship age has been identified from the literature that influences the satisfaction, behavioural and attitudinal loyalty links to fill a research gap (Wangenheim, 2003; Čater and Čater 2009). Relevant to this study, the moderator of relationship age will be explored by this research, providing new insights into the relationships impacting B2B customer loyalty in the manufacturing industry.

The thesis therefore addresses one principal research question and two sub-questions:

1. What factors drive customer loyalty in UK manufacturing companies?
    a. How do functional, social and emotional relationship value influence customer satisfaction and loyalty in a B2B manufacturing context?
    b. How does relationship age influence the satisfaction-loyalty link in a B2B manufacturing context?

1.2 Aim and objectives of the study

The aim of this study is to investigate the factors contributing to B2B customer loyalty with their supplier in the UK manufacturing sector. More specifically, the researcher aims to achieve the following goals:

1. To investigate the role of functional, social and emotional relationship value on customer satisfaction, and behavioural and attitudinal loyalty;
2. To validate the importance of functional, social and emotional value dimensions in supplier-buyer relationships in a specific environment of the UK B2B manufacturing industry;
3. To investigate the moderating role of relationship age on the satisfaction, behavioural and attitudinal loyalty links.

Objectives of the study are:

1. To conduct a detailed literature review on customer loyalty in the B2B sector by: Firstly, reviewing the concept of loyalty and its importance, leading to a discussion of the main loyalty dimensions and definitions. Secondly, critiquing the theory of reasoned action (TRA) to propose a theoretical framework for this study. Thirdly, reviewing the UK manufacturing industry and the relevance of customer loyalty in B2B manufacturing in order to highlight their importance to this research. Fourthly, critically reviewing relevant B2B models of customer loyalty to provide justification for a composite loyalty approach, using TRA as a theoretical framework for the study, incorporating both behavioural and attitudinal dimensions in loyalty measurement and further research to fill several literature gaps. Fifthly, embracing the measurement of loyalty to formulate a multidimensional loyalty measure. Finally, discussing eight key antecedents of loyalty and one important moderator of the satisfaction-loyalty link which require further research and fill several gaps in the literature.
2. To conduct interviews with participants responsible for purchasing management of UK manufacturing firms. These participants will provide a more complete understanding of the phenomenon of customer loyalty in the manufacturing industry.
3. Based on the feedback from the interviews and findings from the literature review a proposed conceptual framework and initial set of hypotheses will be developed to address the principal research question and two sub-questions. The conceptual framework will incorporate the key constructs and moderator variable identified from the literature review requiring further research and urgent exploration to fill several research gaps.

1.3 Contribution of the study

The intended contribution of the thesis to the marketing discipline is to:

- Add value to the current B2B literature on the role relationship value plays in the determination of customer loyalty. Both social and emotional relationship value in a B2B context are rarely analysed (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). The impact of social and emotional relationship value on behavioural and attitudinal loyalty has not been investigated. Their examination is important as it will provide recommendations on how to maximise customer loyalty through strategic combinations of relationship value in the manufacturing industry and provide direction to practitioners on which dimension of value to concentrate their efforts;
- Add further value to the literature in a B2B manufacturing context by investigating the influence of social and emotional relationship value on customer satisfaction. Their exploration is essential as it will give guidance on how to enhance customer satisfaction through different elements of relationship value and will allow practitioners to develop and implement effective strategies to drive customer satisfaction in the manufacturing industry;
- Gain additional insights to both academics and practitioners in the manufacturing industry on the moderating effect of duration of the relationship (Wangenheim, 2003; Chandrashekaran et al., 2007) on the satisfaction-loyalty link in relationship marketing. The influence of relationship age on the satisfaction-behavioural loyalty link has yet to be explored in the B2B literature, which this study will research. Duration of the relationship is considered to be important in industrial markets as relationships tend to be longer than those in consumer markets due to extended investment cycles of industrial products, contributing to stronger loyalty (Mustonen et al., 2016);
- Give policymakers within the UK manufacturing industry and government an improved understanding of the role customer loyalty plays within it, encouraging them to support manufacturing through investment in people, equipment and plant.

1.4 Structure of the thesis

The main components of each chapter of the thesis are summarised in this section. The literature review (*Chapter Two*) initially reviews the concept of loyalty and its importance, leading to discussion of the main loyalty dimensions and definitions from the relationship marketing literature. Moreover, by drawing on the social psychology literature a critical review of the theory of reasoned action provides a theoretical underpinning of the framework for this study. The literature review further examines the UK manufacturing industry and the relevance of customer loyalty in B2B manufacturing in order to highlight their importance to this research. In addition, justification for a composite loyalty approach, TRA as the central theory for the study, incorporating both behavioural and attitudinal dimensions in loyalty measurement and further research to fill several literature gaps is provided by a critical evaluation of relevant B2B models of customer loyalty. The literature search also embraces the measurement of loyalty to formulate a multidimensional loyalty measure. This supports discussion of eight antecedents of loyalty and one moderator of the satisfaction-loyalty link which have been identified from the literature review requiring further research and urgent exploration to fill several research gaps.

The research methodology (*Chapter Three*) is based on the literature review (*Chapter Two*). It discusses the theoretical aspects of the research design. In addition, it also reviews the overall research strategy for data collection and analysis based on a qualitative and quantitative research design. A mixed methods approach using both qualitative (stage 1) and quantitative (stage 2) methods is important to this study. By employing both qualitative and quantitative research and data, the research study will gain a more in-depth understanding of the factors driving B2B customer loyalty in the UK manufacturing industry, while counteracting the weaknesses inherent to using each approach individually.

One key advantage of conducting mixed methods research is the possibility of triangulation. i.e., the use of several mechanisms (methods and data sources) to investigate the same phenomenon (Jick, 1979). Triangulation is defined by Denzin (1978: 291) as ‘the combination of methodologies in the study of the same phenomenon.’ As a result, triangulation will allow for the identification of customer loyalty aspects more insightfully by approaching it from several directions using different research methods and techniques.

Another important aspect of mixed methods research is integration (McKim, 2017). ‘Integration [is] the interaction or conversation between the qualitative and quantitative components of a study’ (O’Cathain et al., 2010: 1147). Integration gives more confidence in the research results and the conclusions drawn from the study (O’Cathain et al., 2010). However, a mixed methods approach does have limitations. As mixed methods research involves collecting and analysing two different types of data this requires additional time (Creswell and Plano Clark, 2007). Moreover, it also requires knowledge of both qualitative and quantitative methodology (McKim, 2017). The two stages will be further discussed:

Stage 1: Qualitative study

- Ten interviews with purchasing managers of UK manufacturing companies, who are decision-makers in selecting and monitoring supplier relationships will be conducted until saturation is reached. The purpose of the interviews are to give further support to the new hypotheses and constructs used in the conceptual framework which are anchored on the literature. In addition, the exploratory research will also shed some new light on the topic that can be incorporated into the study;

Stage 2: Quantitative study

- Measurement instruments will be used which are bedded in previous literature. The research instrument will contain items which operationalise the major constructs and moderator variable;
- Survey questionnaires will be pre-tested and administered by telephone interviews with purchasing managers and the persons responsible for purchasing operations of manufacturing firms in the UK to ensure generalisability of the research study;
- Participants will be selected representing a cross-section of a wide variety of industries and a broad range of company sizes. Participants will represent influential decision-makers in selecting and monitoring supplier relationships in the UK manufacturing industry.

Chapter Four develops a conceptual framework and initial set of hypotheses by applying the findings generated by the literature review (*Chapter Two*) and the results of an exploratory qualitative study (stage 1). In particular, the conceptual framework will incorporate the key variables of functional, social and emotional relationship value as antecedents of customer satisfaction, behavioural and attitudinal loyalty. In addition, a key moderator of the satisfaction-loyalty link, duration of relationship will also be incorporated. The conceptual framework's theoretical underpinning of the theory of reasoned action will be further discussed and applied. The framework for theory building is provided by Dublin's (1978) widely-adopted multi-stage process:

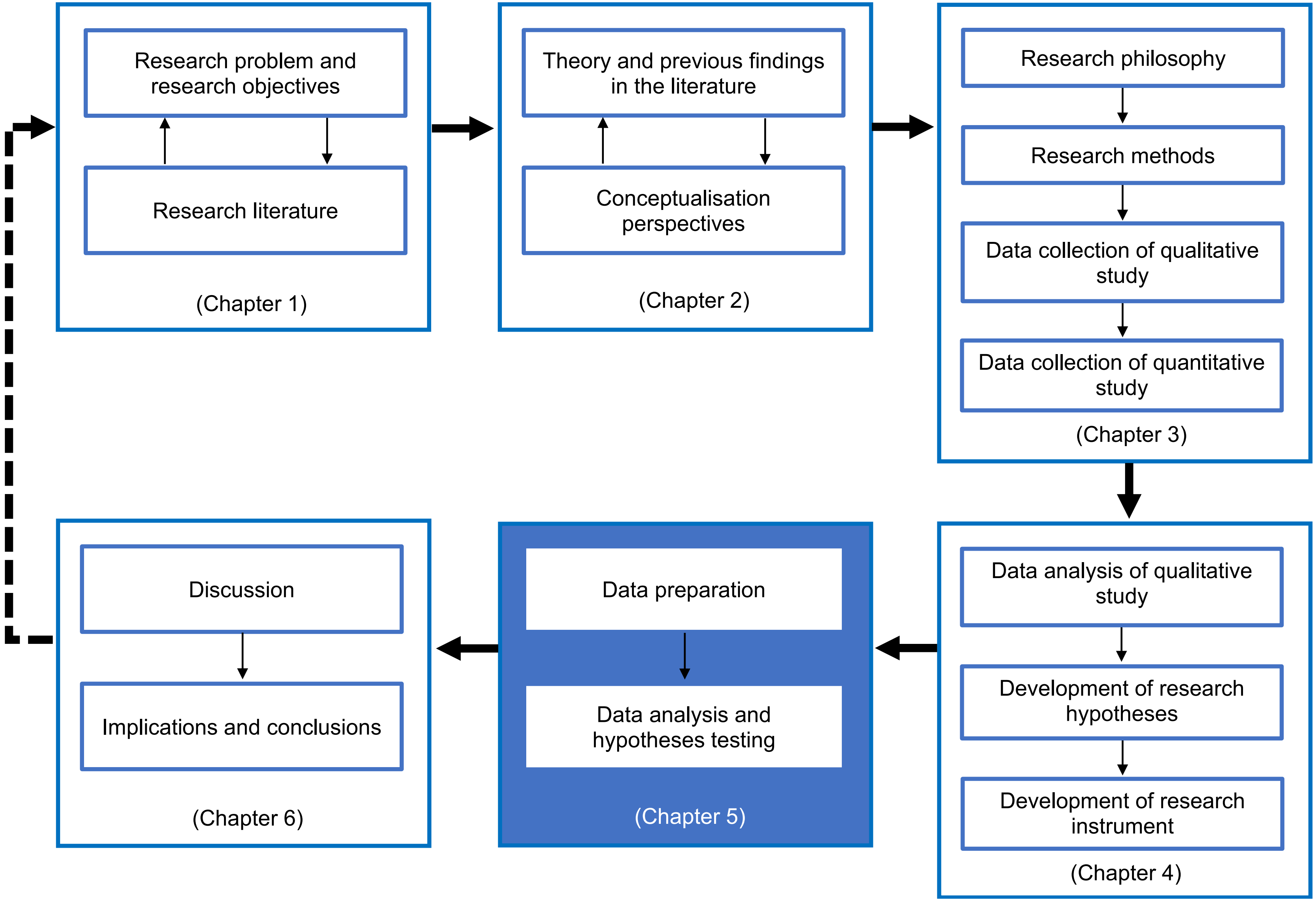
- Identify units;
- Specify laws of interaction;
- Determine boundaries;

- Define system states;
- Generate hypotheses;
- Assign empirical indicators.

The potential results and their significance will be determined by the analysis of the research data and the testing of the conceptual framework. The key outcome will be to confirm or deny support for the hypotheses in answering the principal research question and two sub-questions. The results of this investigation will be incorporated in *Chapter Five*.

Following presentation of the results, *Chapter Six* finalises the research study. It outlines the research results along five key themes, chosen to recapitulate the outcomes of the research and incorporating a discussion of all research hypotheses. The broader implications for both academics and practitioners will be further discussed together with limitations and recommendations for future research. Finally, it summarises the conclusions in terms of the overall contribution of the study. The framework of research activities is presented in Figure 1.1 below.

Figure 1.1 Framework of Research Activities



2 Literature review – customer loyalty in B2B

2.1 Introduction and overview

The chapter aims to provide a critical evaluation of previous work on customer loyalty in the B2B domain. In particular, this chapter locates the concept of customer loyalty in relationship marketing and social psychology literatures.

Relationship marketing endeavours to characterise how long-term relationships between firms and their customers are established (Christopher et al., 2002). Therefore, the fundamental aim of relationship marketing is to create mutually favourable relationships between buyers and sellers (Christopher et al., 2002; LaPlaca, 2004), which is the focus of this study. Discussion and critique of B2B customer loyalty concepts from a relationship marketing literature perspective will generate a definition of customer loyalty for this research. In addition, development in relationship marketing has also underlined the importance of perceived value and customer satisfaction in achieving customer loyalty in B2B research (Fiol et al., 2009). Both these concepts are incorporated in this research. Perceived customer value can be described as relationship value from the viewpoint of relationship marketing (Payne and Holt, 1999).

Additionally, TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) is a well-researched intention model from *social psychology* successfully applied in predicting and explaining behaviour across different domains (Davis et al., 1989). The TRA model defines the links between a person's beliefs, attitudes, norms, intentions, and behaviours. TRA's wide scope and strong literature support, particularly in the B2B manufacturing domain (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b) means it can provide a theoretical explanation of buyer behaviour and will be used as the theoretical framework for this research study.

The next section discusses the structure of the literature review in order to provide an in-depth evaluation of previous work on customer loyalty in the B2B domain from the relationship marketing and social psychology literatures.

2.1.1 Structure of the literature review

The literature review is structured as follows:

The first section (2.2) reviews the concept of loyalty to emphasise its importance within the scope of relationship marketing theory. Additional bodies of theory emerging from the concept of loyalty are social exchange and consumption theories, which will be further discussed. Finally, a critique of prior loyalty research leads to a new perspective on customer loyalty which this research study will investigate.

The second section (2.3) summarises four main loyalty components, namely, behavioural, attitudinal, cognitive and composite loyalty to more effectively understand the explanatory power of the loyalty construct. These discussions support the concept of a composite loyalty approach including both behavioural and attitudinal components.

The third section (2.4) discusses and critiques definitions of customer loyalty from a relationship marketing literature perspective in order to generate a definition of loyalty for this research study based on a composite loyalty approach.

The fourth section (2.5) provides a critical review of the theory of reasoned action in order to provide a theoretical underpinning of the framework for this research study.

The fifth section (2.6) reviews the UK manufacturing industry and the relevance of customer loyalty in B2B manufacturing in order to highlight their importance to this research.

The sixth section (2.7) critically reviews B2B models of customer loyalty to provide justification for a composite loyalty approach, TRA as the central theory for this study, and incorporating both behavioural and attitudinal dimensions in loyalty measurement. Moreover, the important role of customer satisfaction as a mediating affective variable between relationship value and customer loyalty is further justified. In addition, limitations identified from these models will support further research on the key constructs of social and emotional relationship value, and moderator variable of duration of the relationship.

The seventh section (2.8) reviews measurement of customer loyalty in order to formulate a multidimensional measure reflecting both behavioural and attitudinal elements of loyalty (Wangenheim, 2003; Pan et al., 2012; Human and Naudé, 2014).

The eighth section (2.9) discusses literature sources, conceptualisation and operationalisation of eight key antecedents of loyalty requiring further research and urgent investigation to fill several research gaps including relationship quality, customer satisfaction, trust, commitment, relationship value, functional relationship value, social relationship value and emotional relationship value (Jiang et al., 2016; Arslanagic-Kalajdzic and Zabkar, 2017; Casidy and Nyadzayo, 2019).

The ninth section (2.10) identifies a key moderator of the satisfaction-loyalty link, duration of the relationship, which fills a gap in the literature (Wangenheim, 2003; Čater and Čater, 2009; Poujol et al., 2013).

2.2 Concept of loyalty

2.2.1 Overview

This section reviews the concept of loyalty to provide an in-depth understanding of loyalty within the scope of relationship marketing theory, highlighting its importance (2.2.2). Additional bodies of theory emerging from the concept of loyalty are social exchange and consumption theories, which will be further discussed (2.2.3). Finally, this section provides a critique of previous loyalty research (2.2.4), concluding with a discussion on a new perspective on customer loyalty which this research study will explore (2.2.5).

2.2.2 Concept of loyalty within relationship marketing

The study of relationships in industrial markets has been a pivotal area of academic research in marketing since the 1970s (LaPlaca, 2006). Established in 1976 by researchers from various European universities, the Industrial Marketing and Purchasing Group (IMP Group) initiated important research in the field of industrial marketing (Turnbull et al., 1996; Ford, 2004). A particular area of interest was the interpretation of dyadic B2B relationships (Ford, 1980; Hakannson, 1982; Ford et al., 1986; Metcalf et al., 1992; Hällen and Sandström, 1991; Sandström, 1992). As a complement to IMP, a new focus emerged defined as relationship marketing (Morgan and Hunt, 1994; Ravald and Grönroos, 1996; Sweeney and Webb, 2002; Eggert et al., 2006; Plank and Newell, 2006). Relationship marketing endeavours to characterise how long-term relationships between firms and their customers are established (Christopher et al., 2002). This relationship marketing framework accumulates all 'activities directed at establishing, developing, and maintaining successful relational exchanges' (Morgan and Hunt, 1994: 22). Its scope includes all focal relationships (Morgan and Hunt, 1994; Gummesson, 2004), relational marketing (Dwyer et al., 1987), relational contracting (MacNeil, 1980), and collaborative partnerships and strategic alliances (Day, 1990).

The fundamental aim of relationship marketing is to create mutually favourable relationships between buyers and sellers (Christopher et al., 2002; LaPlaca, 2004). In industrial marketing, Jackson (1985: 2) makes reference to relationship marketing as 'marketing oriented toward strong, lasting relationships with individual accounts', which is the central focus of this research study. Although initial research brought about mixed findings (Fournier et al., 1998), generating uncertainty regarding the investment in relationship marketing (Colgate and Danaher, 2000), relationship marketing can be complex and covers a broad range from the discrete transaction to the relational exchange (Anderson and Narus, 1991).

Successful B2B relationships also involve accomplishing value, therefore it has become a vital factor in relationship marketing (Anderson, 1995; Flint et al., 2002; Eggert et al., 2006). As a result, the development of relationship marketing has underlined the importance of both perceived value and customer satisfaction in achieving customer loyalty in B2B manufacturing research (Fiol et al., 2009), which is highly relevant to this research study.

Accordingly, the concept of customer loyalty has received substantial attention in the relationship marketing literature (Singh and Sirdeshmukh, 2000). Loyalty is considered as one of the key measures of organisational success (Nyadzayo and Khajehzadeh, 2016; Paparoidamis et al., 2019), leading to sustained growth and profitability (Rai and Srivastava, 2012; Almomani, 2019; Haghkhah et al., 2020). It has also been acknowledged as a competitive asset for the firm (Chen, 2012). While achieving customer loyalty is the principal marketing objective of any company, building loyalty and securing its benefits are challenging (Watson et al., 2015). Therefore, it is critical to ascertain the best ‘recipe’ for customer loyalty (Russo et al., 2016), which this research study will address. The next section will discuss other bodies of theory emerging from the concept of loyalty together with their limitations.

2.2.3 Other bodies of theory emerging from the concept of loyalty

In addition to relationship marketing, *social exchange* is a widely used theory in marketing research for explaining how business relationships are maintained or terminated over time (Lambe et al., 2001; Cropanzano and Mitchell, 2005; Cropanzano et al., 2016; Jeong and Oh, 2017). The theory posits that human relationships are established by the use of a subjective cost-benefit analysis and a comparison of alternatives (Homans, 1958; Thibaut and Kelley, 1959; Blau, 1964; Kelley and Thibaut, 1978). According to this theory, exit or continuation of exchange relationships depends upon future expectations regarding costs and benefits of the relationship, compared with the expected benefits of alternative relationships (Thibaut and Kelley, 1959). Social exchange theory (SET) provides a theoretical grounding to support customer loyalty, more specifically:

… [if] an individual or an organisation has multiple options, it will choose the most beneficial relationship, and it will remain in the relationship as long as expectations regarding costs and benefits regarding the current relationship (E) surpass a certain threshold, the so-called comparison level of alternatives (CL Alt).

(Wangenheim, 2003: 146).

The theory provides underpinning for the satisfaction-loyalty relationship in the B2B model of Wangenheim (2003). Moreover, it explains the theoretical roles of trust (2.9.4) and relationship satisfaction (2.9.3) in business relationships from the model of SET constructed by Jeong and Oh (2017). This model provides an extension to the widely-cited key mediated variable (KMV) model of Morgan and Hunt (1994), which is based on SET and identifies the constructs of trust (2.9.4) and commitment (2.9.5) as central to B2B marketing.

SET draws from human relationships and aims to understand supplier to customer relationships by looking at human to human relationships. Based on these human collaborations, Miller (2005) outlines several key limitations with SET, namely the theory:

- Reduces human interaction to a solely rational process that derives from an economic analysis;
- Initially encouraging openness when first developed in the 1970s, however more recently there may be occasions when openness may not be the most advantageous choice in a relationship;
- Assumes that the primary objective of a relationship is intimacy, which may invariably not be the case;
- Locates relationships on a linear path, yet some relationships might pass over steps or even take a step back in terms of relationship intimacy.

In addition, Cropanzano and Mitchell (2005) also highlight that a further issue with SET is the apparent shortage of information on the varying exchange rules such as altruism (social responsibility), group gain, status, consistency and competition. Although SET has been applied to B2B studies to understand business relationships (Morgan and Hunt, 1994; Wangenheim, 2003; Jeong and Oh, 2017) the theory does have major limitations. Additionally, from an ontological point of view SET stands in direct opposition with TRA which assumes that humans make rational, predictable decisions that can be observed through several stages. Relevant to this study, importantly, TRA has been applied as a theoretical framework for key customer loyalty models from the B2B manufacturing domain (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b). Hence, social exchange theory is limited as a central theoretical framework for this research.

Originally developed to explain consumer purchasing behaviour, according to Sheth et al. (1991: 159), *consumption value theory* 'is applicable to choices involving a full range of product types (….) industrial goods, and services'. Following a comprehensive review of the literature in the disciplines of economics, sociology, psychology and consumer behaviour, the theory establishes five independent consumption values affecting consumer choice behaviour. These are functional, social, emotional, epistemic and conditional value. Further application to the multidimensional conceptualisation of relationship value in a B2C domain reduced the number of variables to three, functional, social and emotional (Sweeney and Soutar, 2001). More recent studies have expanded this framework to business markets (Candi and Kahn, 2016; Arslanagic-Kalajdzic and Zabkar, 2017). However, the theory does have limitations. Consumption value theory has only been applied to the development of a multidimensional concept of relationship value including functional, social and emotional components in the B2B services domain (Arslanagic-Kalajdzic and Zabkar, 2017). As a consequence, this limits the use of consumption theory as a central theoretical framework for this research. The next section provides a critique of the current B2B customer loyalty research.

2.2.4 Critique of current research on customer loyalty

A summary of B2B customer loyalty studies highlighting research methodology and sample size together with the direct antecedents of loyalty is presented in Tables 2.3 to 2.15. The B2B domains addressed in prior research include manufacturing, health care, hospitality, insurance, furniture retail, professional services (consulting, financial, marketing research, advertising), logistics (courier services, third-party logistics, logistics) and multiple service industries including energy provision, bio-diagnostic, software applications, information and communication technology, telecommunications, facility management, calibration laboratories and medical. The dominant research methodology used in previous loyalty studies is quantitative survey questionnaires. In addition, B2B researchers have also used qualitative methods to explore key facets of the proposed constructs for their conceptual framework. Other research studies have also used qualitative methods and expert reviews to support the development of the quantitative survey. The main countries that were researched include the USA, Canada, Australia, Germany and Spain. One B2B services study also focused on UK consulting firms. However, not all countries were specified where the B2B research took place.

Emerging from the relationship marketing paradigm, relationship quality is recognised as having a key influence on the long-term stability of buyer-seller relationships (Hennig-Thurau and Klee, 1997; Hewett et al., 2002; Ulaga and Eggert, 2006b; Bardauskaite, 2014). As a result, B2B studies have found support for the influence of relationship quality (Hewett et al., 2002; Hutchinson et al., 2011; Athanasopoulou and Giovanis, 2015) and its key dimensions of customer satisfaction (Matzler et al., 2015; Jeong and Oh, 2017; Almomani, 2019; Khan et al., 2020; Sharma, 2022), trust (Ramaseshan et., 2013; Paparoidamis et al., 2019; Almomani, 2019; Vlachos, 2021) and commitment (Human and Naudé, 2014; Kim et al., 2018; Almomani, 2019) on customer loyalty. In the B2B manufacturing domain in comparison to trust and commitment, customer satisfaction is acknowledged as the most important variable of relationship quality (Ulaga and Eggert, 2006b). The key role of customer satisfaction as a mediating affective variable between relationship value and customer loyalty is also confirmed by the mediated impact model (Eggert and Ulaga, 2002).

Successful B2B relationships also involve delivering value, therefore it has become a vital factor in relationship marketing (Anderson, 1995; Flint et al., 2002; Eggert et al., 2006). The advancement of relationship marketing has highlighted the importance of perceived value in attaining B2B loyalty in research studies (Fiol et al., 2009). From the viewpoint of relationship marketing, perceived customer value is understood to be relationship value (Payne and Holt, 1999). However, while the influence of relationship value on loyalty has been supported in the B2B manufacturing domain (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b; Fiol et al., 2009; Mustonen et al., 2016), in the B2B professional services domain research studies have shown inconsistent findings. The impact of relationship value on loyalty has been confirmed in some studies (Whittaker et al., 2007; Casidy and Nyadzayo, 2019), but not in other research results (Patterson and Spreng, 1997; Lapierre et al., 1999). Whittaker et al. (2007: 351) argue that it is 'the contextual elements of the professional service under examination as well as structural and market aspects of the domain that affect these relationships', causing varying research results.

Prior B2B research has predominantly focused on the functional aspect of relationship value (Ruiz-Martinez et al., 2019). Alternatively, Fiol et al. (2009, 2011) and Arslanagic-Kalajdzic and Zabkar (2017) conceptualised value as a multidimensional construct comprising of three dimensions, functional, social and emotional (Sheth et al., 1991). Whittaker et al. (2007) emulate a similar concept, but further add the dimensions of epistemic (Sheth et al., 1991), image and price/quality (LeBlanc and Nguyen, 1999). In both the B2B service research studies of Whittaker et al. (2007) and Arslanagic-Kalajdzic and Zabkar (2017) testing the influence of functional, social and emotional relationship value dimensions on loyalty generated inconclusive results. Whittaker et al. (2007) found no linkage between the three value dimensions and loyalty using a small sample size of 78 participants and operationalising loyalty as repeat business. Whereas Arslanagic-Kalajdzic and Zabkar (2017) found a link between emotional value and loyalty only, operationalising loyalty more generally, but including one item of repurchase intention in its measurement. There is a dearth of prior research that investigates the influence of social and emotional relationship value on customer loyalty in the B2B manufacturing domain. These relationships will be explored by this research study.

A number of B2B research studies have also explored the moderating effect of manufacturer, relationship, situational, firm-related and demographic-related characteristics on the satisfaction-loyalty link (Homburg et al., 2003; Wangenheim, 2003; Chandrashekaren et al., 2007; Paulssen and Birk, 2007; Arslanagic-Kalajdzic and Zabkar, 2017). Relationship age has been shown to be important in explaining how industrial firms can achieve B2B customer loyalty (Wangenheim, 2003; Chandrashekaran et al., 2007) and will be investigated further by this research.

Overall, the existing research on business loyalty suggests a number of key limitations including:

- Prior empirical studies have been conducted in different B2B research domains providing inconsistent research findings (Pan et al., 2012; Bardauskaite, 2014);
- Qualitative methods have received little consideration compared to quantitative methods. Such insights could be of particular importance in generating new knowledge (Bardauskaite, 2014);
- There is no concurrence on the conceptualisation and operationalisation of the loyalty construct (Pan et al., 2012). Many researchers agree that the loyalty construct should incorporate both behavioural and attitudinal elements (Rauyruen and Miller, 2007; Čater and Čater, 2009, 2010; Ozuem et al., 2016). However, in previous B2B studies loyalty is often viewed as a unidimensional concept. As a result, there still remain significant conceptual and empirical gaps in the definition and conceptualisation of B2B loyalty (Vlachos, 2021).
- Previous B2B research has mostly focused on the functional aspect of relationship value (Ruiz-Martinez et al., 2019). A multidimensional conceptualisation of relationship value including functional, social and emotional elements is rarely studied (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017);
- There is a perception that the current organisation buyer behaviour research area is in a mature state resulting in a lack of interest or recognised need for further study (Vieira and Brito, 2015).

This section reviewed and critiqued the current literature on B2B customer loyalty leading to a discussion on a new perspective on customer loyalty below.

2.2.5 New perspective on customer loyalty

To fully understand the complex nature of loyalty, this study will adopt a multidimensional approach using both behavioural and attitudinal dimensions of loyalty (Wangenheim, 2003;

Pan et al., 2012; Human and Naudé, 2014). The research will propose a new theoretical perspective on B2B customer loyalty in the manufacturing industry by focusing on social perceptions and emotions of relationship value and their impact on customer satisfaction, behavioural and attitudinal components of loyalty. Moreover, to provide new insights into the relationships affecting B2B customer loyalty in the manufacturing industry, a key moderator variable closely associated with industrial markets, duration of the relationship will be investigated to understand its impact on the satisfaction, behavioural and attitudinal loyalty links.

In addition, by adopting a mixed methods approach a more in-depth and unique understanding of B2B customer loyalty in the manufacturing domain will be accomplished. Prior research on customer loyalty has predominantly used quantitative methods to test B2C models in a B2B context with little consideration for qualitative methods (Bardauskaite, 2014). As a result of this research study both practitioners in the manufacturing industry and academics in the field of relationship marketing will benefit from a new perspective on B2B customer loyalty.

This overall section reviews the concept of loyalty to emphasise its importance within the scope of relationship marketing. Additional bodies of theory including social exchange and consumption theories emerging from the concept of loyalty are further discussed together with their limitations. This debate highlights that these two theories are limited in their application as a central theoretical framework for this study. Finally, a critique of prior loyalty research leads to a new perspective on customer loyalty which this research study will investigate.

2.3 Loyalty and of its dimensions

2.3.1 Overview

This section aims to review four dimensions of loyalty highlighted in the literature to better understand the explanatory power of the loyalty construct. These dimensions of loyalty include:

1. Behavioural loyalty (2.3.2);
2. Attitudinal loyalty (2.3.3);
3. Cognitive loyalty (2.3.4); and
4. Composite loyalty (2.3.5).

2.3.2 Behavioural loyalty

Jacoby and Chestnut (1978) state that the focus of behavioural loyalty studies is towards an understanding of repeat purchasing patterns in primarily panel data to explain loyalty. Further support for the focus on repeat behaviour to understand loyalty comes from the studies of Patterson and Spreng (1997) and Whittaker et al. (2007). Consistent with these views, Haghkhah et al. (2013) argue that behavioural loyalty is stochastic not deterministic. However, although some researchers continue to measure behavioural loyalty, many scholars believe that loyalty includes more than just a behavioural dimension (Gremler and Brown, 1996). To address these limitations, Uncles and Laurent (1997) posit that to improve understanding of behavioural loyalty, further study of attitudinal loyalty is required.

2.3.3 Attitudinal loyalty

Attitudinal loyalty is perceived to be a long-term commitment or psychological attachment. In support of the attitudinal concept, Palmatier et al. (2005: 147) state that ‘only customers who have strong relationships with sellers are willing to risk their own reputation by giving a referral’. Researchers identify several attitudinal concepts. These include positive word-of-mouth (Eggert and Ulaga, 2002), recommending the product or service to others, and patronage (Dwyer et al., 1987; Fornell, 1992; Lam et al., 2004). However, a characteristic of attitudinal loyalty is that it may not necessarily result in purchase related behaviour (Bardauskaite, 2014).

2.3.4 Cognitive loyalty

A further dimension identified in the literature is cognitive loyalty. Gremler and Brown (1996) posit that a customer can be very loyal and not consider other firms when selecting a supplier. Similarly, Dwyer et al. (1987: 19) argue that these customers ‘have not ceased attending to alternatives but maintain awareness of alternatives without constant and frenetic testing’. This suggests that loyal customers are not actively considering other firms when making subsequent purchases (Gremler and Brown, 1996). However, a limitation of this definition of loyalty is that a customer might not consider other suppliers simply because there are none available (Bardauskaite, 2014). In addition, from a review of the literature cognitive loyalty only appears to be relevant to the B2B service industry where suppliers offer specialised services. It has not been applied in the context of the B2B manufacturing industry which offers a wider scope of tangible products.

2.3.5 Composite loyalty

Therefore, to understand loyalty, a composite approach which includes both behavioural and attitudinal components is advanced (Rauyruen and Miller, 2007; Čater and Čater, 2009, 2010, Dikcius et al., 2019; Sharma, 2022). Day (1969) was the first to propose a reconciliation of both behavioural and attitudinal elements of loyalty, suggesting that by viewing loyalty in terms of just purchasing evaluations may not discriminate between loyalty and spurious loyalty (Rauyruen and Miller, 2007). Spurious loyalty is defined as customers which seem to have positive attitudes toward a supplier and may occasionally purchase products from the supplier. However, they are equally as inclined to purchase similar products from competitors. Other B2B researchers such as Caceres and Paparoidamis (2007) and Ozuem et al. (2016) further support the composite loyalty concept, as it gives better predictive power of the loyalty construct (Haghkhah et al., 2020). As a consequence, this study will adopt a composite loyalty approach, which in addition to providing a better understanding of the loyalty construct, also meets the research aims of investigating the factors driving both behavioural and attitudinal loyalty.

This section reviewed four dimensions of loyalty highlighted in the literature. These discussions support the concept of a composite loyalty approach for this B2B manufacturing study. The next section will review definitions from the relationship marketing literature in order to formulate a loyalty definition for this research based on a composite loyalty approach.

2.4 Definitions of customer loyalty

2.4.1 Overview

This section aims to discuss and critique definitions of customer loyalty from the relationship marketing literature in order to generate a definition of customer loyalty for this study (2.4.2). A summary of B2B loyalty definitions is presented in Tables 2.1 and 2.2 highlighting that the existing viewpoint of loyalty is based on the dimensions of behavioural, attitudinal and cognitive loyalty discussed in the previous section (2.3).

2.4.2 B2B loyalty definitions from literature

Within the scope of relationship marketing many B2B researchers use the widely-cited B2C loyalty definition of Oliver (1999) in their research studies (Wangenheim, 2003; Chumpitaz and Paparoidamis, 2004; Caceres and Paparoidamis, 2007; Arslanagic-Kalajdzic and Zabkar, 2017; Kittur and Chatterjee, 2021) stated as:

> *. . . a deeply held commitment to rebuy or repatronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour.*
>
> (Oliver, 1999: 34).

Oliver's (1999) definition suggests that loyalty is a long-term commitment, ranging from a loyal customer to one who never considers using another provider in the future. This three-dimensional definition including behavioural, attitudinal and cognitive dimensions is consistent with other researchers view of the concept of loyalty (Gremler and Brown, 1996; Flint et al., 2011; Ramaseshan et al., 2013; Bardauskaite, 2014; Picón et al., 2014).

However, this view of a customer being very loyal and not considering other firms when selecting a supplier is limited as it has not been applied in the context of the B2B manufacturing literature which offers tangible products. Therefore, important to this study, Hutchinson et al. (2011: 467) state that loyalty is more appropriately defined as 'the intentions that the customer will repurchase from the supplier and support the supplier with positive word-of-mouth comments'. This definition suggests that loyalty is a repeat purchasing behaviour and a positive referral by the customer.

Expanding this viewpoint of loyalty and separately examining both behavioural and attitudinal components of loyalty (Chaudhuri and Holbrook, 2001; Maxham, 2001; Evanschitzky et al., 2006), Rauyruen and Miller (2007) define:

> ***Behavioural loyalty*** *as the willingness of average business customers to repurchase the service and the product of the service provider and maintain a relationship with the service provider/supplier, and* ***attitudinal loyalty*** *as the level of customer's psychological attachments and attitudinal advocacy towards the service provider/supplier.*
>
> (Rauyruen and Miller, 2007: 23).

This definition suggests loyalty can be viewed as a repurchase behaviour while maintaining a close relationship with the supplier and a psychological attachment and belief in the supplier. However, although Rauyruen and Miller (2007) provide a rich definition of loyalty using two separate elements, its limitation is that the definition is more appropriate in a B2B services context. As a result, Čater and Čater (2009, 2010) adapt this definition to more accurately reflect the B2B manufacturing domain, further removing the words ‘average business’ which are superfluous.

As a consequence, this study adopts Čater and Čater’s (2009, 2010) definition of loyalty as:

> ***Behavioural loyalty*** *as the customer’s willingness to repurchase the product and to continue a relationship with the supplier, while* ***attitudinal loyalty*** *is the level of the customer’s psychological attachments and attitudinal advocacy vis-à-vis the supplier.*
>
> (Čater and Čater, 2009: 586).

In this case, loyalty is viewed as a repeating purchasing behaviour while continuing a long-term relationship with the supplier and a psychological attachment leading to a recommendation. Several more recent B2B studies have adopted these definitions of behavioural and attitudinal loyalty providing further evidence of their relevance in B2B loyalty research (Human and Naudé, 2014; Paparoidamis et al., 2019).

This section discusses and critiques concepts of customer loyalty from the relationship marketing literature. Overall, the definitions highlight that loyalty is viewed as a complex and multidimensional concept consisting of behavioural and attitudinal components (Pan et al., 2012; Ozuem et al., 2016). Importantly, the behavioural and attitudinal loyalty definitions of Čater and Čater (2009, 2010) find support for this study as they encompass the loyalty concept in the B2B manufacturing domain.

Table 2.1 Definitions of B2B loyalty by dimension

Dimension	Definition of Loyalty	Studies
Behavioural	'The willingness of average business customers to repurchase the service and the product of the service provider and maintain a relationship with the service provider/supplier'.	Rauyruen and Miller (2007: 23)
	'The customer's willingness to repurchase the product and to continue a relationship with the supplier'.	Čater and Čater (2009: 586); Čater and Čater (2010: 1325)
	'The willingness of average business customers to repurchase the service and/or product of the supplier and maintain a relationship with the supplying firm'.	Paparoidamis et al. (2017: 5)
	'A customer's propensity to maintain a relationship or intention to expand purchasing volumes with a supplier'.	Ulaga and Eggert (2006b: 313)
	'The intention of a buyer to continue the purchasing relationship with a supplier and to expand the quantity and volume of the relationship'.	Homburg et al. (2003: 38)
	'The customer's intention to perform a diverse set of behaviors that signal a motivation to maintain a relationship with the focal firm'.	Sirdeshmukh et al. (2002: 20); Casidy and Nyadzayo (2019: 7)
	'The set of behaviours that reflect the motivation to maintain the relationship and that are favoured by the activities developed by the seller and by other contextual factors'.	Ruiz-Martinez et al. (2019: 1869)
	'A buyer's intent to repurchase from a given supplier'.	Russo et al. (2016: 899)
	'A customer's intent to repurchase'.	Blocker et al. (2011: 223)
	'The behavioral intention to repurchase from a parent company and to maintain the relationship'.	Mutlu and Taş (2012: 217)
	'The perceived likelihood that a focal firm will terminate the relationship with another firm in the reasonably near future'.	Morgan and Hunt (1994: 26); Adbul-Muhmin (2005: 621)
	'The likelihood of terminating the relationship in the near future'.	Jeong and Oh (2017: 118)
Attitudinal	'A buyer's overall attachment or deep commitment to a product, service, brand, or organization'.	Lam et al. (2004: 294); Briggs et al. (2007: 1146); Poujol et al. (2013: 432)
	'The level of customer's psychological attachments and attitudinal advocacy towards the service provider/supplier'.	Rauyruen and Miller (2007: 23); Human and Naudé (2014: 921)
	'The level of the customer's psychological attachments and attitudinal advocacy vis-à-vis the supplier'.	Čater and Čater (2009: 586); Čater and Čater (2010: 1325)
	'The degree of a customer's psychological attachments and attitudinal advocacy toward the supplying firm'.	Paparoidamis et al. (2017: 5)
	'The degree of psychological affection and recommendations for suppliers among buyers'.	Kim et al. (2018: 101)

Source: Author.

Table 2.2 Definitions of B2B loyalty by dimension (2)

Dimension	Definition of Loyalty	Studies
Attitudinal and Behavioural	'The intentions that the customer will re-purchase from the supplier and support the supplier with positive word-of-mouth comments'.	Hutchinson (2011: 467)
	'The future behavior commitment to purchase a product or service'.	Fiol et al. (2009: 280)
Attitudinal, Behavioural and Cognitive	'A deeply held commitment to rebuy or repatronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour'.	Oliver (1999: 34); Wangenheim (2003: 146); Chumpitaz and Paparoidamis (2004: 237); Caceres and Paparoidamis (2007: 838); Arslanagic-Kalajdzic and Zabkar (2017: 50); Kittur and Chatterjee (2021: 18)
	'A buyer's deeply held commitment to stick with a product, service, brand, or organization consistently in the future, despite new situations or competitive overtunes to induce switching'.	Flint et al. (2011: 222)
	'A deeply held commitment to re-patronize a preferred product/service consistently in the future, thereby causing repeat purchase despite situational influences and marketing efforts having potentials to induce switching'.	Ramaseshan et al. (2013: 336)
	'The degree to which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider, and considers only this provider when a need for this service arises'.	Gremler and Brown (1996: 173); Bardauskaite (2014: 39)
	'The degree to which customers intend to repeat their purchases in the future, express a positive attitudinal willingness toward the provider, and consider this provider the sole option for future transactions'.	Picón et al. (2014: 747)

Source: Author.

2.5 Theory of reasoned action

2.5.1 Overview

This section aims to conduct a critical review of the theory of reasoned action (TRA) to provide a theoretical underpinning of the framework for this research study in the B2B manufacturing domain. The section discusses TRA's origins and conceptual framework (2.5.2), scope, applications and limitations (2.5.3), critiques (2.5.4) and other relevant models which evolved from TRA (2.5.5).

2.5.2 Origins and conceptual framework of the theory of reasoned action

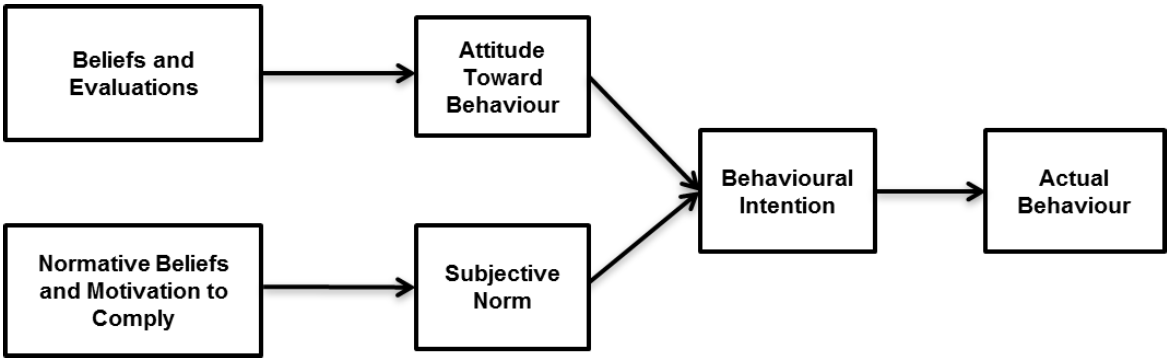
There is much debate about precise definitions of an attitude. Eagly and Chaiken (1993) state that an attitude is a unified and enduring state of readiness to respond. This traditional view assumes:

> *… a consistently updated predisposition that serves as a convenient evaluative summary of some object, issue, or person. When confronted by a stimulus, a stored evaluation comes to mind automatically, guides thought, and helps direct behavior.*
>
> (Cohen and Reed, 2006: 1).

Despite this on-going debate, the important effect of attitudes on behaviour is supported by a growing interest in attitude theory within both psychology and consumer behaviour research. Derived from attitude theory, TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) is a well-researched intention model from social psychology that has been successfully applied in predicting and explaining behaviour across many different domains (Davis et al., 1989). The theory makes two claims. Firstly, it defines the links between a person's beliefs, attitudes, norms, intentions, and behaviours in a model shown in Figure 2.1. According to Davis et al. (1989), a person's behaviour is determined by his or her behavioural intention to perform it. Subsequently, intention is determined by the person's attitudes and subjective norms towards the behaviour. The theory is formulated as:

Behavioural intention = Attitude + Subjective norms

Figure 2.1 Theory of Reasoned Action



Source: Davis et al. (1989: 984), based on Fishbein and Ajzen (1975).

Fishbein and Ajzen (1975) define subjective norms as the person's perception that people important to him or her think they should perform or not perform the behaviour in question. Subjective norms are determined by the normative beliefs of a person and by his or her motivation to comply to the norms (Fishbein and Ajzen, 1975). Furthermore, a person's attitude toward a behaviour is further determined by his or her beliefs on the consequences of the behaviour, multiplied by his or her evaluation of those consequences (Davis et al., 1989). As TRA is a general model, beliefs must be identified that are relevant for the particular behaviour under investigation. Application of this theory provides a theoretical explanation of buyer behaviour.

Secondly, according to TRA, cognitive attributes are mediated by affective ones resulting in behavioural outcomes (Eggert and Ulaga, 2002; Lam et al., 2004; Ulaga and Eggert, 2006b). This framework provides theoretical underpinning for key B2B loyalty models including the mediated impact model (2.7.2), the relationship value, satisfaction, trust and commitment model (2.7.3) and customer value, satisfaction, switching costs and loyalty model (2.7.6). The next section reviews TRA's scope, applications and limitations.

2.5.3 Scope, applications and limitations of the theory of reasoned action

Originally developed within the field of health care to understand behaviours, TRA is a general model 'designed to explain virtually any human behavior' (Ajzen and Fishbein, 1980: 4). Broadening TRA's scope, a meta-analysis research study reported strong support for the overall predictive power of Fishbein and Ajzen's model, authenticating its generalisability (Sheppard et al., 1988). TRA's wide scope has meant it has been used in many research studies as a framework for investigating particular types of behaviour such as health care behaviour, consumer behaviour, communication behaviour and computer acceptance behaviour (Fishbein and Ajzen, 1975; Ryan and Bonfield, 1975; Ajzen and Fishbein, 1980; Shimp and Kavas, 1984; Davis et al., 1989; Albarracín et al., 2001; Yousafzai et al., 2010; Roberto et al., 2011). Relevant to this study, importantly TRA has also been applied as a theoretical framework for customer loyalty models from the B2B manufacturing domain (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b).

However, although the breadth of TRA is wide, the theory still has several limitations. The distinction between a goal intention and a behavioural intention concerns the capacity to achieve one's intention, which involves multiple factors thus creating a level of uncertainty (Sheppard et al., 1988).

This limitation of TRA is acknowledged by Ajzen (1985):

> *… some behaviors are more likely to present problems of controls than others, but we can never be absolutely certain that we will be in a position to carry out our intentions. Viewed in this light it becomes clear that strictly speaking every intention is a goal whose attainment is subject to some degree of uncertainty.*
>
> (Ajzen, 1985: 24).

As a consequence, Eagly and Chaiken (1993) state that TRA does not explain that certain conditions facilitate the performance of a behaviour. Since the TRA concentrates on behaviours that are under a person’s volitional control, the theory is limited in terms of its ability to predict behaviours that require access to certain opportunities, skills, conditions, and/or resources (Eagly and Chaiken, 1993).

In addition, a further limitation of TRA is that certain intentions do not necessarily play a part in linking attitudes and actual behaviour (Bagozzi et al., 1989). Research by Bagozzi and Yi (1988) highlighted that the performance of a behaviour was not consistently preceded by a strong intention. Moreover, attitudes and behaviours may not always be linked by intentions, particularly if the behaviour requires a small amount of cognitive effort (Bagozzi et al., 1989).

2.5.4 Critiques of the theory of reasoned action

The TRA model has been challenged by research studies intent on investigating its limitations. The main issue relating to TRA is that it ignores the associations between individual people, both the interpersonal and social interaction in which they perform, and the more wide-ranging social structures which administers social practice (Terry et al., 1993). Although TRA has appreciation for the prominence of social norms, propositions are constrained to an understanding of individual viewpoints of these social phenomena. Schwartz and Tessler (1972) suggested that there could be further factors affecting intentions other than attitudes toward the behaviour and subjective norms. These additional variables influencing intention may include a person's sense of right and wrong, besides their moral obligation arising out of these views (Schwartz and Tessler, 1972). Furthermore, social change may be generational as opposed to the summation of individual change. TRA does not encapsulate and overgeneralises the nature and processes of social change (Terry et al., 1993; Pinder, 2008).

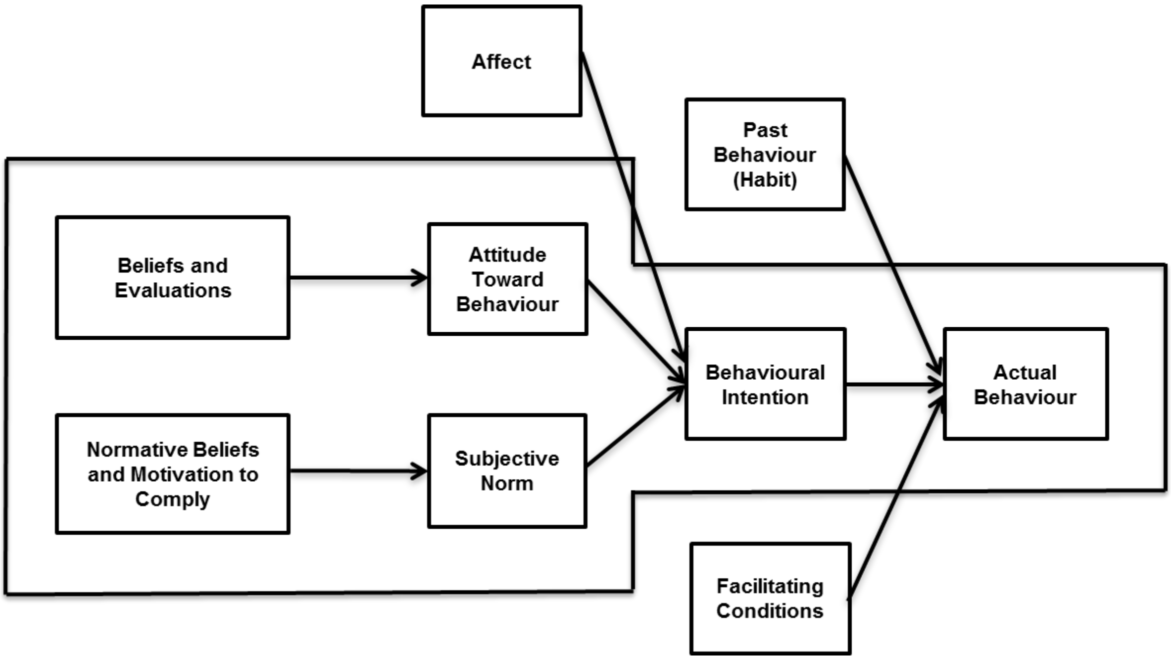
Moreover, the habituation of past behaviour also has a tendency to reduce the influence that intention has on behaviour as the habit expands. Progressively, the behaviour performance becomes less rational and more of a reaction that has been acquired by learning. Furthermore, it has also been highlighted that the direct impact of intention on behaviour may be only short term based (Bagozzi, 1981). Finally, in cross-cultural applications, attitude strength toward a behaviour (social/personal) and subjective norms can be different, while the process in which the behaviour is performed remains the same (Bagozzi et al., 2000).

To counter these arguments several researchers have suggested that further research on TRA is still required (Park, 2000; Jaccard, 2012), while other researchers have advanced other models formulated from TRA (Triandis, 1979; Ajzen 1988, 1991). Two important models, relevant to this study, which evolved from TRA will be discussed next.

2.5.5 Other models derived from the theory of reasoned action

Triandis (1979) proposed expansion of TRA to include the additional variables of habit, facilitating conditions, and affect, as presented in Figure 2.2. When a behaviour is performed by a person in a routine way then a habit is formed. Facilitating conditions are circumstances that make accomplishment of an action more or less challenging. Both habit and facilitating conditions are shown to directly influence behaviour (Triandis, 1979). Affect is a person's emotional response toward a behaviour. In contrast to the other two factors, this emotional response only influences behavioural intention instead of directly impacting behaviour (Triandis, 1979). This broadened version of TRA has been used to research behaviours such as women's involvement in health care procedures (Montano and Taplin, 1991).

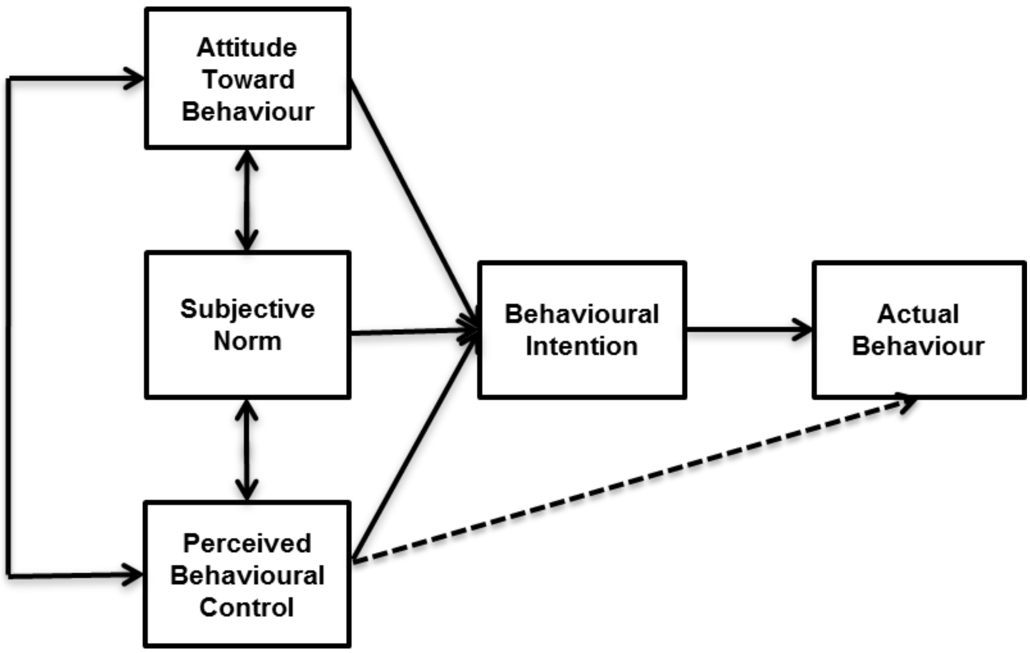
Figure 2.2 Theory of Reasoned Action and expanded components



Source: Montano and Taplin (1991: 734), based on Fishbein and Ajzen (1975). Note: Shaped area represents TRA (Fishbein and Ajzen, 1975).

Additionally, to further improve the predictive power of TRA, a later contribution, the theory of planned behaviour (TPB) (Ajzen 1988, 1991) includes perceived behavioural control, as shown in Figure 2.3. Perceived behavioural control refers to the extent to which a person thinks that they control any given behaviour (Ajzen, 1991). By the addition of perceived behavioural control, the relationship between behavioural intention and actual behaviour is more fully explained. The theory has enhanced the predictability of intention in many different health-related fields. A number of meta-analysis research studies have also been conducted which support the theory's claims (Godin and Kok, 1996; Albarracin et al., 2001; Amitage and Conner, 2001; Webb et al., 2010; McEachan et al., 2011).

Figure 2.3 Theory of Planned Behaviour



Source: Ajzen (1991: 182).

This section provides a critical review of TRA to provide a theoretical explanation of customer buyer behaviour and a framework for this research study. Support for TRA as a theory comes from existing B2B manufacturing research studies (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b) and B2B services research study (Lam et al., 2004) where according to TRA, cognitive attributes are mediated by affective ones resulting in behavioural outcomes (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). The next section reviews the UK manufacturing industry and the relevance of customer loyalty with in it.

2.6 B2B loyalty in the UK manufacturing industry

2.6.1 Overview

This section's objective is to initially provide a review of the UK manufacturing industry (2.6.2) to emphasise its worthiness of deserving research attention. For the B2B manufacturing industry, the importance of customer relationships, the unique challenges of acquiring loyalty and the benefits of achieving customer loyalty are further discussed to highlight the relevance of customer loyalty in this domain (2.6.3).

2.6.2 UK manufacturing industry

The UK manufacturing industry is worthy of consideration for this research study as it is an important part of the UK economy (Institute of Mechanical Engineers, 2022). The UK remains one of the world's leading manufacturing nations. The industry produces more goods today than it did in the 1980s, and manufacturing provides work for 2.5 million people in increasingly highly skilled jobs (Make UK, 2022). Manufacturers invest heavily in their people, with average earnings in the UK manufacturing industry being £35,277 compared to the UK average of £31,447 for the whole economy (all industries and services) (Make UK, 2022).

With the manufacturing sector output valued at £183 billion, contrary to common belief, UK manufacturing remains strong, currently the ninth largest manufacturing nation in the world (The Manufacturer, 2022). Manufacturing makes up 10 per cent of UK gross value added (GVA), 51 per cent of UK exports, 64 per cent of business research and development (R&D) spend and 15 per cent of total business investment (Make UK, 2022).

Make UK (2022) highlights that the sectors of other manufacturing (20 per cent), food and drink (17 per cent), chemicals and pharmaceuticals (16 per cent), and transport (13 per cent) greatly contribute to UK's GVA from manufacturing. In terms of R&D expenditure the key sectors of chemicals and pharmaceuticals (35 per cent), and transport (34 per cent) significantly drive UK manufacturing innovation. Finally, in terms of exports, the other manufacturing sector accounts for just under 29 per cent, the transport sector represents just over 17 per cent, whereas chemicals and pharmaceuticals demonstrate nearly 15 per cent (Make UK, 2022). The top export destinations for UK manufactured goods include: United States (£43.2 billion), Germany (£32.4 billion), The Republic of Ireland (£21.6 billion), the Netherlands (£19.7 billion), France (£18.6 billion) and China (£14.4 billion), contributing to the UK's position as the tenth largest exporter in the world (Make UK, 2022).

The metals sector further indicates the highest export growth, increasing by 5.2 per cent from 2010 to 2020 (Make UK, 2022). Transport is the second fastest growing export, with an increase of 4.1 per cent between 2010 and 2020 by virtue of the sustained growth of the aerospace industry (Make UK, 2022). The Make (2022) report also highlights that the transport, and chemicals and pharmaceuticals sectors have shown the largest average investment growth between 2010 and 2020 (Make UK, 2022). Finally, the report by Make UK (2022) also highlights geography as a consideration, with London and the South East region of the UK accounting for £32.3 billion of manufacturing output, while the North West region follows with £27.4 billion.

The combination of Brexit and the COVID-19 pandemic have caused considerable global disruption to supply chains, operational shutdowns and reduced output at factories in the UK. In addition, there has been a sharp increase in the price of commodities that are used to manufacture products including steel, aluminium, copper, resins and plastics. Furthermore, rapid and continued increases in global demand of semiconductors and historically low inventories throughout the supply chain, have caused extreme limitations of materials resulting in severe shortages of semiconductors and significant price increases, affecting UK producers.

This section discusses why the UK manufacturing industry is worthy of attention for this research study. Support for its consideration comes from UK manufacturing industry data based on employment levels, employee earnings, GVA, exports and business R&D spend. Despite the COVID-19 pandemic causing a substantial reduction in the UK's manufacturing sector output in 2020, Make UK (2022) forecasts that the sector's output value will return to its pre-pandemic level by 2023. This adds further justification for the UK manufacturing sectors inclusion in this research study. The next section builds on this information to discuss the importance of customer loyalty in the B2B manufacturing industry.

2.6.3 Customer loyalty relevance in the B2B manufacturing industry

In the UK manufacturing industry, it is not just high-end consumer packaged goods and high-technology electronic products that must excel in their consumer relationships, so they remain sector market leaders. There is also a desire for a focused, intimate experience in B2B industries. For example, the machinery, electrical equipment, and metals sectors of the UK manufacturing industry have traditionally handled a large percentage of build-to-order customer accounts. However, more recently, purchasing management and decision-makers have much higher expectations from their relationships in these sectors as their demands evolve.

In the B2B manufacturing industry, global competition and threats of product commoditization ensure suppliers continue to search for ways to differentiate themselves through enhanced customer interactions (Eggert et al., 2018). Consequently, they are devoting substantial resources toward customer loyalty and retention (Russo et al., 2016; Khan et al., 2020). However, customer loyalty can be complex to understand and achieve.

In a survey by Bain & Company of 290 executives across 11 countries in B2B industries including manufacturing, 68% of respondents stated that customers are less loyal than they have been in the past (Russo et al., 2016). Moreover, due to specific characteristics of the industry, the survey also highlights that acquiring loyalty in B2B markets presents its own unique challenges, frequently encompassing complicated channel structures, concentrated buyer communities, large accounts with multiple relationship influencers, and ever-changing perceived value (Michels and Dullweber, 2014).

Despite these industry related challenges, the report also underlines the significant benefits for B2B firms who achieve customer loyalty. Customers that are loyal:

- Purchase more in terms of value and quantity of products, leading to a sustainable and lasting competitive advantage, with potential impact on profitability (Martinelli et al., 2015; Ramanathan et al., 2017; Almomani, 2019).
- Require less cost to serve and generate increased revenues (Lam et al., 2004; Rauyruen and Miller, 2007; Russo et al., 2016);
- Stay longer in the supplier-buyer relationship and be more inclined to refer the supplier to work colleagues.

Notwithstanding the considerable benefits of achieving customer loyalty, if companies in the manufacturing sector do not keep up with changing industry and market trends, and engage with customers on multiple levels they are at risk of decline and being replaced by a competitor. This emphasises the importance of understanding the antecedents of customer loyalty in the manufacturing industry, which this research study will explore.

This overall section highlights that the UK manufacturing industry is worthy of investigation. In addition, the relevance of customer loyalty in the B2B manufacturing industry is supported through discussion of the importance of customer relationships, the specific industry characteristics of loyalty attainment and the significant benefits of gaining loyalty in this domain. Consequently, there is a high level of interest to identify the factors that influence B2B customer loyalty, with the objective of developing and implementing the most appropriate marketing strategies (Picón et al., 2014).

2.7 Models of customer loyalty

2.7.1 Overview

This section aims to critically review B2B models of customer loyalty to provide support for the concept of a composite loyalty approach (2.3); TRA as the theoretical framework for this study (2.5); and the incorporation of both behavioural and attitudinal dimensions in loyalty measurement (2.8). Moreover, justification is also provided for the important role of customer satisfaction (2.9.3) as a mediating affective variable between relationship value and customer loyalty. Additionally, discussion of model limitations will lead to a call for further research on social relationship value (2.9.8), emotional relationship value (2.9.9), and moderator variable of duration of the relationship (2.10.1) which this study will explore to fill several research gaps.

Key contributions from the literature are:

1. The mediated impact model (Eggert and Ulaga, 2002, 2.7.2);
2. The relationship value, satisfaction, trust and commitment model (Ulaga and Eggert, 2006b, 2.7.3);
3. The customer loyalty model in a cluster environment (Fiol et al., 2009, 2.7.4);
4. The relationship-value-based antecedents of customer loyalty model (Čater and Čater, 2009, 2.7.5);
5. The customer value, satisfaction, switching costs and loyalty model (Lam et al., 2004, 2.7.6);
6. The customer satisfaction influencing customer loyalty model (Wangenheim, 2003, 2.7.7).

The models presented address and support key aspects which are relevant to this study:

- The importance of the two different dimensions of loyalty, behavioural and attitudinal, and the alternative paths required to achieve each dimension to better understand the explanatory power of the loyalty construct;
- TRA as a theoretical framework applied to the B2B manufacturing and services domain;
- Incorporating both behavioural and attitudinal dimensions in loyalty measurement;

- Customer satisfaction as the most significant variable of relationship quality, compared to trust and commitment, and its important role as a mediating affective variable between relationship value and customer loyalty.

The models under review will also highlight a number of key limitations, resulting in further investigation and urgent exploration to fill several gaps in the loyalty literature, which this study will research, including:

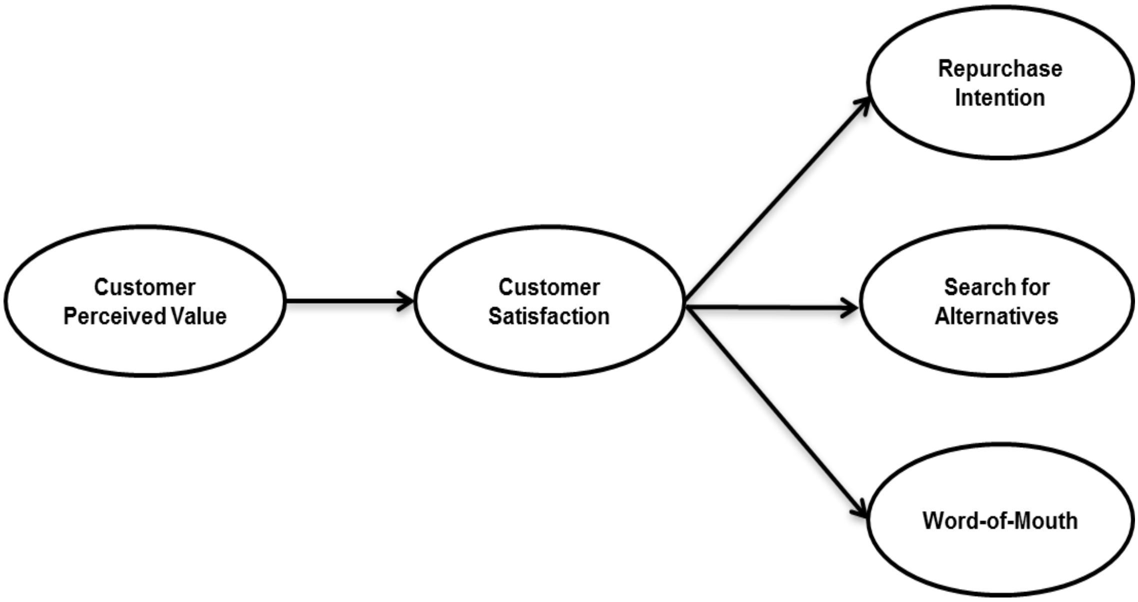
- The impact of social and emotional relationship value on customer satisfaction, behavioural and attitudinal loyalty;
- The influence of moderator variable relationship age on the satisfaction-loyalty link.

The next section will critically review six B2B models of customer loyalty which are important to this research study.

2.7.2 Mediated impact model

In the mediated impact model shown in Figure 2.4, customer perceived value is proposed to have an indirect impact on behaviour outcomes, whereas customer satisfaction is considered to be a mediating variable between customer perceived value and the purchasing managers' behavioural intentions. This model is based on the theory of reasoned action (Fishbein and Ajzen,1975), which according to the framework set out by Fishbein and Ajzen (1975) provides theoretical guidance with respect to the interplay between cognition, affection and behavioural intentions (Ulaga and Eggert, 2006b).

Figure 2.4 Mediated impact model



Source: Eggert and Ulaga (2002: 113).

In their research model, Eggert and Ulaga (2002) use three variables to reflect behavioural outcomes, intention to repurchase, word-of-mouth, and the intention to search for an alternative supplier. The study has been conducted within the context of a supplier-manufacturer relationship.

Four key findings emerge from the mediated impact model:

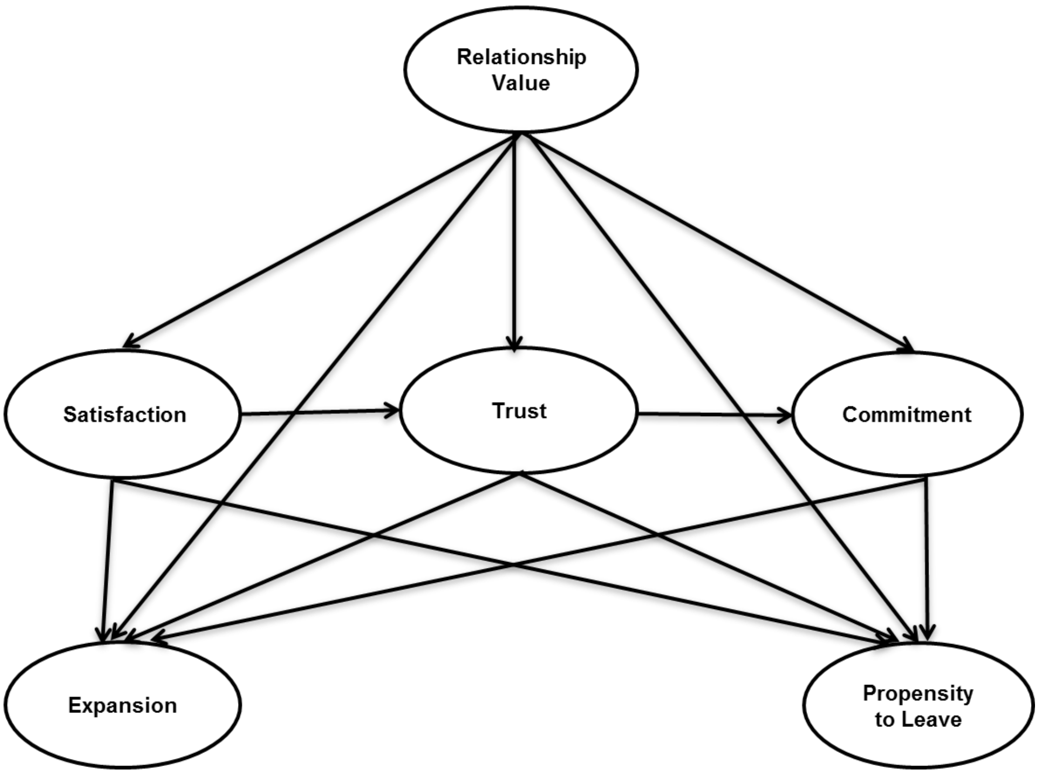
1. Customer perceived value has a positive impact on customer satisfaction;
2. Satisfaction itself has a positive impact on repurchase and word-of-mouth intention, and in addition, it reduces the search for alternatives;
3. This model is a better fit than Eggert and Ulaga’s (2002) competing model where a direct relationship between perceived value and behavioural outcomes is proposed;
4. Customer perceived value has an indirect impact on behavioural outcomes.

These findings improve our understanding of the interplay between customer perceived value and customer satisfaction on behaviour outcomes in a B2B manufacturing setting. The key role of customer satisfaction as a mediating affective variable is also confirmed which is relevant to this study. Additionally, TRA as a theoretical framework applied in the B2B manufacturing domain is further supported, which is important to this research study. Despite these key findings the constructs of trust and commitment have been excluded from the model.

2.7.3 Relationship value, satisfaction, trust and commitment model

Building on the principles of the mediated impact model (2.7.2), the model shown in Figure 2.5 investigates the links between relationship value, satisfaction, trust, commitment and behavioural outcomes. While some variables moderate these links, others have a direct impact. In line with previous studies of Crosby et al. (1990) and Dorsch et al. (1998), Ulaga and Eggert's (2006b) research study focuses on satisfaction, trust and commitment as key variables of relationship quality.

Figure 2.5 Relationship value, satisfaction, trust and commitment model



Source: Ulaga and Eggert (2006b: 322).

Similar to the mediated impact model (2.7.2), Ulaga and Eggert's (2006b) research model is based on the theory of reasoned action (Fishbein and Ajzen,1975), which suggests that cognitive perceptions of value interact with affective feelings of satisfaction, trust and commitment leading to behavioural outcomes (Ulaga and Eggert, 2006b). The researchers use only two variables to reflect behavioural outcomes, propensity to leave, and intention to expand. The study has been conducted within the context of a supplier-manufacturer relationship.

Four key findings result from this model:

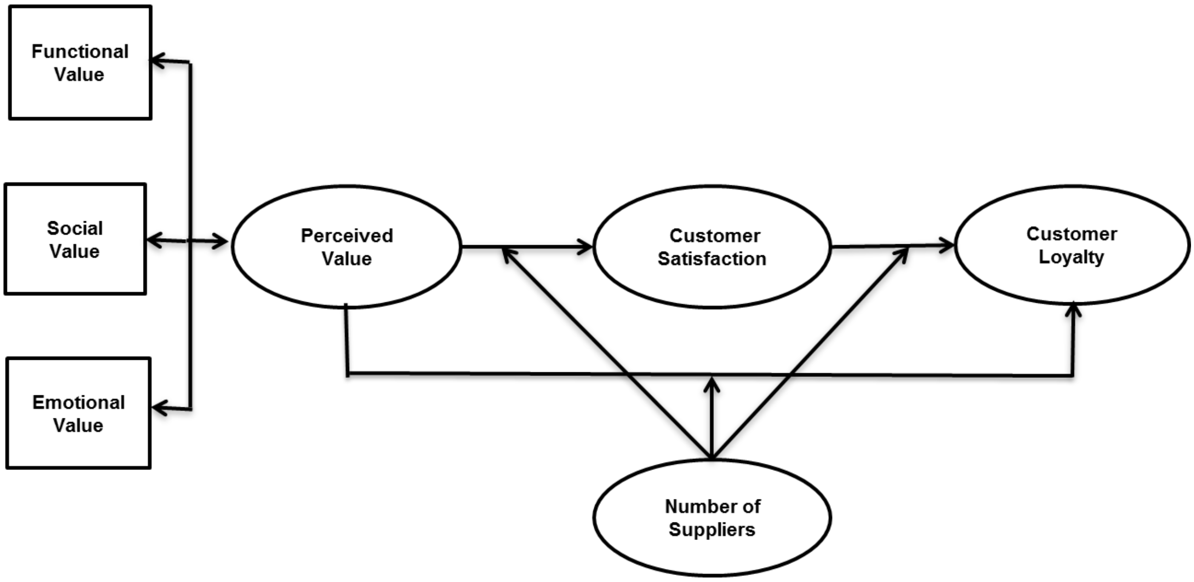
1. Value has a positive influence on satisfaction, trust and commitment, with its relationship with satisfaction being strongest;
2. Value also has a positive impact on a customer's intention to expand business with a supplier. However, the variables of satisfaction, trust and commitment mediate its impact on propensity to leave a relationship;
3. Satisfaction and commitment both have a positive impact on behavioural outcomes, propensity to leave, and intention to expand, with the influence of satisfaction being strongest;
4. Trust does not have a direct impact on behavioural outcomes, but instead acts as a mediator for the link between satisfaction-commitment.

These findings provide insights into the complex relationships between value, satisfaction, trust, commitment and customer loyalty. Evidence of the importance of relationship value, satisfaction and commitment on impacting both propensity to leave, and intention to expand in a B2B manufacturing context are confirmed. Despite both constructs of trust and commitment being included in the model, which was identified as one of the limitations of the mediated impact model (2.7.2), the construct of trust does not have a direct relationship with behavioural outcomes. However, relevant to this study, the model provides evidence that satisfaction has the strongest influence on both dimensions of loyalty compared to relationship value, commitment and trust in a manufacturing context. In addition, similar to the mediated impact model (2.7.2), TRA is highlighted as a theoretical framework applied in B2B manufacturing research. Finally, a limitation of the model is that it has not been tested with moderator variables (Ulaga and Eggert, 2006b). This is also relevant to this research study as the moderator variable of relationship age has been shown to influence the satisfaction-loyalty link, and warrants further investigation to fill a gap in the literature (Wangenheim, 2003; Čater and Čater, 2009).

2.7.4 Customer loyalty model in a cluster environment

In the customer loyalty model shown in Figure 2.6, Fiol et al. (2009) state that perceived value in a cluster is a second order multidimensional construct comprising three dimensions, functional, social and emotional (Sheth et al., 1991). A cluster is defined as a group of suppliers within a consideration set. Perceived value is further proposed to have a direct impact on customer satisfaction and customer loyalty, whereas customer satisfaction is considered to have a positive influence on customer loyalty. The relationships between perceived value, satisfaction and loyalty in a cluster are also suggested to be moderated by the number of suppliers. In building their model from prior literature, Fiol et al. (2009) argue that perceived value and satisfaction are key elements in explaining loyalty behaviour in industrial markets (Flint et al., 2002; Spiteri and Dion, 2004; Eggert et al., 2006). The relationship under investigation in the study is the supplier-manufacturer one.

Figure 2.6 Customer loyalty model in a cluster environment



Source: Fiol et al. (2009: 281).

Four key findings originate from the customer loyalty model in a cluster environment:

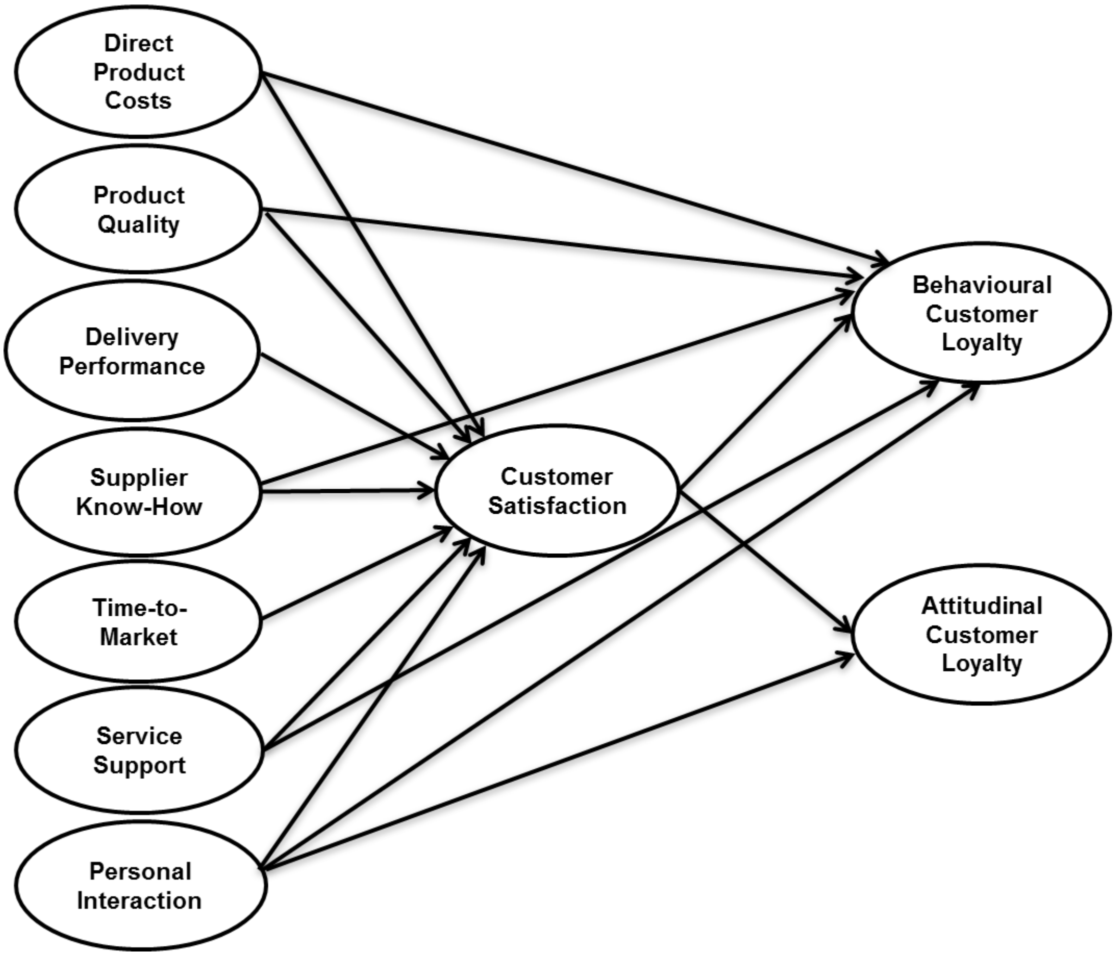
1. Perceived value and customer satisfaction are antecedents of customer loyalty;
2. Perceived value, from a multidimensional perspective, is highlighted as a key variable influencing customer satisfaction and customer loyalty;
3. Functional, social and emotional value all have a positive influence on perceived value;
4. The number of suppliers (moderating variable) have no impact on the relationships between manufacturing firms and their suppliers.

Improved understanding of the relationship between perceived value as a multidimensional construct, customer satisfaction and customer loyalty result from these findings. However, the model has been used to study a specific case of relationships in a cluster, which limits generalisation of its results. Similar to the limitation stated for the mediated impact model (2.7.2), Fiol et al's (2009) model also excludes the key construct of trust. In addition, analysis of the social and emotional elements of perceived value in B2B literature which support this model are scant (Fiol et al., 2011). More recently, Arslanagic-Kalajdzic and Zabkar (2017) also highlight that both social and emotional perceived value in a B2B context are rarely analysed despite having been shown to play an important role in business relationships (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). As a consequence, further investigation of the impact of social and emotional perceived value on customer satisfaction, behavioural and attitudinal loyalty has been suggested by Arslanagic-Kalajdzic and Zabkar (2017) to fill a literature gap, which this research study will investigate.

2.7.5 Relationship-value-based antecedents of customer loyalty model

The customer loyalty model shown in Figure 2.7 is based on the research of Čater and Čater (2009). In contrast to the customer loyalty model in a cluster environment (2.7.4), Čater and Čater (2009) argue in line with prior research of Iacobucci et al. (1994), Devaraj et al. (2001) and Spiteri and Dion (2004), that the higher order construct of value is not necessary and propose a model that investigates relationship benefits and direct product costs (price) as the antecedents of customer satisfaction and customer loyalty. Their model proposes that customer satisfaction mediates the relationship between seven elements of relationship value, direct product costs, product quality, delivery performance, supplier know-how, time-to-market, service support and personal interaction, and two outcome variables of behavioural and attitudinal loyalty. The study has been conducted within the context of a supplier-manufacturer relationship.

Figure 2.7 Relationship-value-based antecedents of customer loyalty model



Source: Čater and Čater (2009: 589).

Six key findings materialise from this model:

1. Satisfaction is negatively influenced by direct product costs and positively influenced by delivery performance, supplier know-how and personal interaction;
2. Satisfaction itself has a positive influence on behavioural and attitudinal loyalty;
3. Behavioural loyalty is negatively influenced by direct product costs and positively influenced by product quality;
4. Attitudinal loyalty is positively influenced by personal interaction;
5. Direct relationships not supported include product quality, time-to-market and service support on customer satisfaction, and supplier know how, service support and personal interaction on behavioural customer loyalty.

6. Behavioural loyalty is indirectly affected by delivery performance, supplier know how and personal interaction, whereas attitudinal loyalty is indirectly impacted by direct product costs, delivery performance and supplier know how.

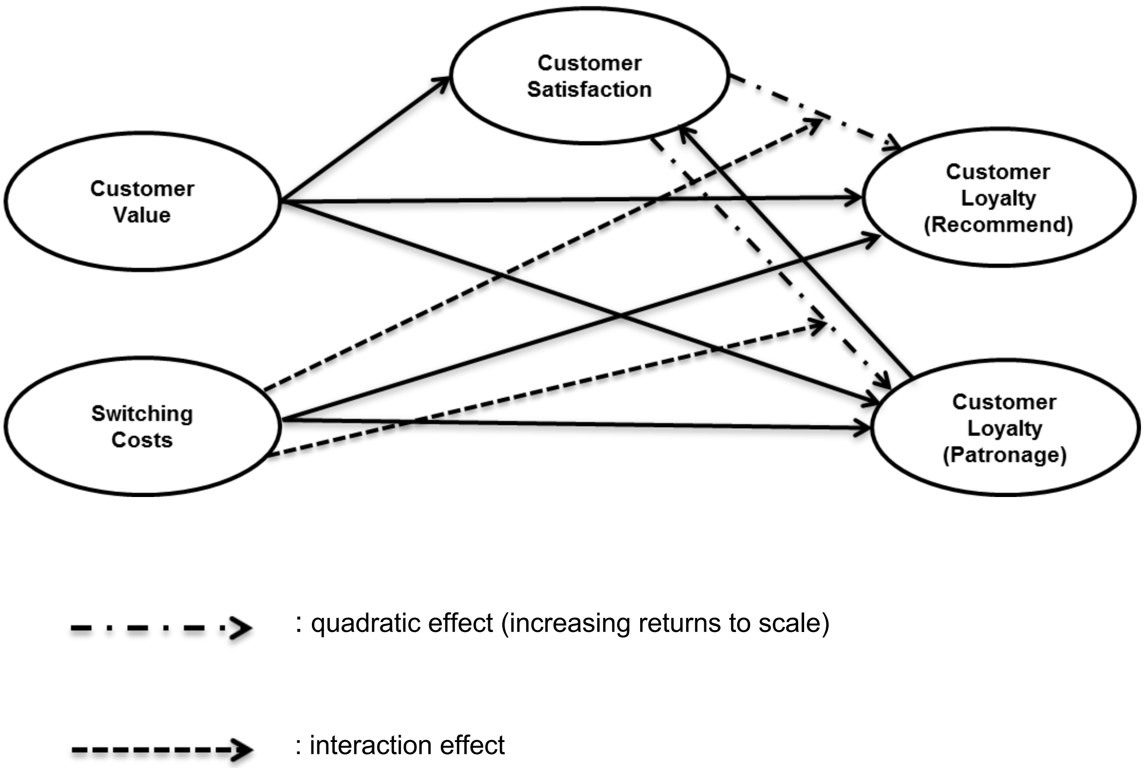
These findings improve our understanding of the antecedents of customer loyalty in a B2B manufacturing setting. In addition to the positive impact of customer satisfaction on both loyalty dimensions, Čater and Čater (2009) posit that the antecedents of behavioural customer loyalty are more ‘rational’ and ‘firm driven’ (direct product costs and product quality), whereas the antecedents of attitudinal customer loyalty are more ‘emotional’ and ‘individual driven’ (personal interaction). Relevant to this study, this model reinforces the importance of the two different dimensions of loyalty, behavioural and attitudinal, to better understand the complex nature of the loyalty construct. Furthermore, product quality does not influence customer satisfaction. This is contrary to findings from the previous studies of Janda et al. (2002), Caceres and Paparoidamis (2004) and Abdul-Muhmin (2005). Čater and Čater (2009) argue that in a manufacturing context superior product quality is not a critical determinant but a necessary entry condition. Moreover, a further five out of 15 proposed hypotheses are not supported. Čater and Čater (2009: 593) state that ‘since some of them have not been tested extensively in past studies and not much is known about these relationships, further study is called for to contribute to theory development in this area’.

A further limitation of the model is that it has not been tested with moderator variables (Wangenheim, 2003; Paulssen and Birk, 2007). Čater and Čater (2009: 594) state ‘it would be interesting to test whether situational, firm-related and employee-related characteristics have a significant effect on the satisfaction-loyalty link’. This is also relevant to this study as relationship age has been shown to be important moderator variable that influences the B2B satisfaction-loyalty link (Wangenheim, 2003; Chandrashekaren et al., 2007), and will be explored by this research. Finally, the satisfaction-mediated indirect effects of relationship value dimensions on both loyalty components provides evidence of the important role satisfaction plays as a mediating affective variable, which is pertinent to this study.

2.7.6 Customer value, satisfaction, switching costs and loyalty model

The customer loyalty model shown in Figure 2.8 proposes that customer perceived value, customer satisfaction, and switching costs are antecedents of customer loyalty in a B2B services context. Based on the theory of reasoned action (Fishbein and Ajzen, 1975), the mediating role of customer satisfaction in the relationship between customer value and customer loyalty is investigated. Moreover, Lam et al. (2004) suggest that customer satisfaction and patronage dimension of loyalty have a reciprocal effect on each other. Additionally, the interaction effect of customer satisfaction and switching costs on customer loyalty is examined. Finally, the quadratic effect of customer satisfaction on customer loyalty is further evaluated. The researchers argue that customer loyalty has two dimensions, namely, recommendation and patronage. The recommendation dimension describes several items such as saying positive things or recommending the service provider to others, or encouraging other companies to do business with the service provider (Lam et al., 2004). Whereas the patronage dimension describes the items pertaining to repurchase intention by considering the service provider as first choice for courier services or doing further business with the service provider in the next few years (Lam et al., 2004). The study has been conducted within the context of a service provider-customer relationship.

Figure 2.8 Customer value, satisfaction, switching costs and loyalty model



Source: Lam et al. (2004: 295).

Six key findings originate from this model:

1. Two dimensions of customer loyalty are positively related to customer satisfaction and switching costs;
2. Customer value has a positive effect on customer satisfaction;

3. Customer value also has a positive influence on the patronage dimension of loyalty;
4. Customer satisfaction totally mediates the impact of customer value on the recommend dimension of loyalty, whereas the mediation is only partial for the patronage dimension of loyalty;
5. No support of the interaction effect of customer satisfaction and switching costs, and the quadratic effect of customer satisfaction on customer loyalty;
6. No support for the reciprocal relationship between customer satisfaction and the patronage dimension of loyalty.

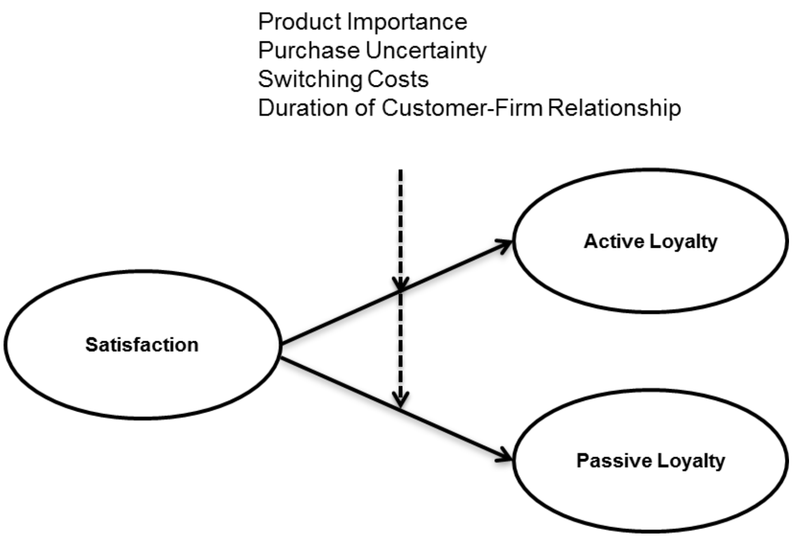
These findings enrich understanding of the complex relationships between customer perceived value, customer satisfaction, switching costs, and customer loyalty. The implications are that both customer satisfaction and switching costs play important roles in the formation of customer loyalty in a B2B services context. Customer value also influences the patronage dimension of loyalty. The key role of customer satisfaction as a mediating affective variable is also confirmed which is relevant to this study. However, Lam et al's (2004) study found that customer satisfaction totally mediates the impact of customer value on the recommend dimension of loyalty only, whereas for the patronage dimension of loyalty the mediation is partial. Further evidence of satisfaction's mediating role is provided by the mediated impact model (2.7.2) and the relationship-value-based antecedents of customer loyalty model (2.7.5). This model also demonstrates the importance of the two different dimensions of loyalty and TRA as a theoretical framework applied in the B2B domain, both relevant to this research study.

Despite these key findings, this model has a number of limitations. Firstly, there is no support for the reciprocal relationship between customer satisfaction and the patronage dimension of loyalty. Moreover, in spite of prior support for both increasing and decreasing returns of scale on the effect of customer satisfaction on repurchase intention (Anderson and Sullivan,1993; Mittal and Kamakura, 2001), the researchers found no evidence of the quadratic effect of customer satisfaction on either loyalty dimension. Lam et al. (2004) suggest that the quadratic relationship may be less strong in a B2B context compared with a B2C context. Furthermore, despite previous studies reporting significant interaction effects (Jones et al., 2000) or non-linear effects (Mittal and Kamakura, 2001) of customer satisfaction on customer loyalty, the researchers found no indication of the interaction effect of either customer satisfaction or switching costs on customer loyalty. Lam et al. (2004) argues that their smaller sample size of 234 responses relative to other studies of Jones et al. (2000), and Mittal and Kamakura (2001) may have affected their findings, as the potential of hypothesis testing is positively linked to the size of the sample. In addition, Lam et al's (2004) model excludes the key construct of trust. Finally, the study is based on the courier industry which encompasses the buying characteristics of the B2B services industries. This may limit generalisation of the findings.

2.7.7 Customer satisfaction influencing customer loyalty model

In the model shown in Figure 2.9, customer satisfaction is proposed to have a positive influence on customer loyalty based on social exchange theory (Homans, 1958; Thibaut and Kelley, 1959; Blau, 1964; Kelley and Thibaut, 1978). In addition, the model explores the role of situational characteristics as moderating variables on the satisfaction-loyalty link (Wangenheim, 2003). Drawing on prior research in industrial buying behaviour and B2C loyalty, Wangenheim (2003) posits that product importance (Bunn, 1993), purchase uncertainty (Spekman and Stern, 1979), perceived switching costs (Nielson, 1996; De Ruyter et al., 1998) and the duration of the customer relationship (Bolton, 1998) are important moderators. The researchers distinguish between customers that are active and passive in their measurement of loyalty. Active loyalty is described 'as the items pertain to active behavioural intentions such as the willingness to stay in the relationship or recommend the provider to other customers' (Wangenheim, 2003: 150). Whereas passive loyalty 'describes behavior in response to competitive action, such as reactions to relative price changes' (Wangenheim, 2003: 150). The relationship under investigation in the study is the service provider-customer one.

Figure 2.9 Customer satisfaction influencing customer loyalty model



Source: Wangenheim (2003: 152).

Five key findings emerge from this model:

1. Customer satisfaction has a positive influence on both dimensions of loyalty;
2. The satisfaction-active loyalty relationship is stronger if product importance is high. No similar support is found for the satisfaction-passive loyalty relationship;
3. In contrast, the satisfaction-passive loyalty relationship is weaker with high purchase uncertainty, although, this is not confirmed for the satisfaction-active loyalty link;
4. The satisfaction-active loyalty relationship is weaker if switching costs are high. No equivalent support is acknowledged for the satisfaction-passive loyalty relationship;
5. The influence of satisfaction on both dimensions of loyalty is stronger for old than for new customers.

These findings provide evidence that the satisfaction-loyalty B2B link is moderated by several variables. However, with the exception of duration of customer relationship, these moderating effects can only be corroborated for either active or passive loyalty, rather than both dimensions. The model also has a number of limitations. In the measurement of the loyalty construct attitudinal multi-item scales have been used. Other researchers have shown that loyalty should be measured as both an attitude and a behaviour. As a consequence, Wangenheim (2003: 155) posit that 'in future research, loyalty should be measured as both an attitude and a behavior to determine the 'true' form of the satisfaction-loyalty link'. Relevant to this study incorporating both behavioural and attitudinal dimensions in customer loyalty measurement is further supported from the literature (Pan et al., 2012; Human and Naudé, 2014). Finally, Wangenheim (2003: 155) states that 'future research should test whether the effects found here can be confirmed in other industrial markets as well'. This is also relevant to this B2B manufacturing research study as duration of the relationship has been shown to influence the satisfaction-loyalty link and further research will fill a gap in the literature (Čater and Čater, 2009).

This overall section critically reviews customer loyalty B2B models providing literature support for the following important aspects which are applicable to this research study:

- The concept of a composite loyalty approach;
- TRA as the theoretical framework for this B2B manufacturing study;
- The incorporation of both behavioural and attitudinal dimensions in loyalty measurement;

- Customer satisfaction as the most significant variable of relationship quality and its important role as a mediating affective variable between relationship value and customer loyalty.

Additionally, the models discussed highlight important limitations, resulting in further examination and urgent exploration to fill several gaps in the loyalty literature, which this study will research, including:

- The influence of social and emotional relationship value on customer satisfaction, behavioural and attitudinal loyalty;
- The impact of the moderator variable of relationship age on the satisfaction, behavioural and attitudinal loyalty links.

The next section will review measurement of B2B customer loyalty including measurement indicators, type of scale and literature source to support multi-item measures for the loyalty construct based on a composite loyalty approach.

2.8 Measurement of loyalty

2.8.1 Overview

This section's purpose is to analyse measurement of the loyalty construct in order to find multi-item measures that reflect both behavioural and attitudinal elements. The section will provide an in-depth discussion on:

1. Measurement indicators of the loyalty construct (2.8.2); and
2. Type of scale, number of scale items and scale source (2.8.3).

2.8.2 Measurement indicators of the loyalty construct

A summary of the customer loyalty construct and its measurement indicators is presented in Tables 2.3 to 2.15. A number of B2B studies just use repurchase intention or the reverse of intention to repurchase (intention to leave) to measure customer loyalty. In comparison, only one study of Chandrashekaran et al. (2007) uses recommendation exclusively. A small number of studies in B2B services use repeat business with the supplier or contract renew as a measure of repurchase intention.

Two studies use intention to expand business with the supplier as a further measure of loyalty (Homburg et al. 2003; Ulaga and Eggert 2006b). In addition to recommendation, Wangenheim (2003) also use reaction to price change as an indicator. Finally, a number of research studies use a more general determination for loyalty measurement.

However, the predominance of studies reviewed use two variables, intention to repurchase and recommendation to measure behavioural intentions or loyalty. Using these two key measurement variables are important to this study as they accurately reflect both behavioural and attitudinal elements of the multidimensional loyalty construct in the manufacturing domain. Therefore, drawing on a review of the literature, repurchase intention and recommendation are postulated as key dimensions of loyalty measurement for this study. The next section discusses the type, number of items and sources of the measurement scale.

2.8.3 Type of scale and literature source

For loyalty measurement scales, a summary of the scale type, number of scale items used and literature source is presented in Tables 2.3 to 2.15. Firstly, the majority of loyalty studies deploy either five-point or seven-point Likert-type scales. Secondly, the key loyalty studies use between two to six scale items to measure repurchase intention and recommendation. Multi-item scales are important as they enhance measurement reliability and therefore provide stronger relationships than single-item measures (Peter and Churchill, 1986; Pan and Zinkhan, 2006). Finally, for the research studies denoted by * in Tables 2.3 to 2.15 the primarily source of the loyalty scales are either directly or indirectly from Zeithaml et al. (1996). Originally developed in the B2C service quality literature, Zeithaml et al's (1996) scale has been subsequently adapted to the B2B manufacturing domain by Čater and Čater (2009) and includes both a behavioural and attitudinal component. These scales are important for this study because they have already been validated in the manufacturing sector and are widely supported from the B2B manufacturing literature on loyalty (Čater and Čater 2009, 2010; Fiol et al., 2009; Kim et al., 2018). Regarding these scale items Čater and Čater (2009: 590) state that the two components exist as:

Behavioural element

- 'We consider this supplier as our first choice for this kind of product';
- 'We are going to do more business with this supplier in the next few years'.

Attitudinal element

- ‘I say positive things about this supplier to my colleagues in other firms’;
- ‘I recommend this supplier to colleagues who seek my advice’.

Further support comes from Pan et al. (2012: 157) who posit ‘that research on customer loyalty employ multi-item measures that reflect both attitudinal and behavioral elements’. In addition, Pan et al. (2012: 157) state that ‘future empirical research could gain further insights if they incorporate both attitudinal and behavioral dimensions in loyalty measurement’. Therefore, this study will measure customer loyalty using a seven-point Likert-type scale, sourced and adapted from Zeithaml et al. (1996) with four scale items to measure repurchase intention and recommendation being widely supported from the literature.

Table 2.3 Review of B2B customer loyalty studies 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Sharma*	2022	Behavioural customer loyalty	1. Customer satisfaction 2. Product quality 3. Cost 4. Delivery and logistics 5. Ease of negotiating, coordinating and making decisions on relationship issues	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	127	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996) and Čater and Čater (2009).	Repurchase intention (2 items); recommendation (2 items, including 1 item of word-of-mouth).
		Attitudinal customer loyalty	1. Customer satisfaction 2. Ease of negotiating, coordinating and making decisions on relationship issues 3. Product quality 4. Cost 5. Collaboration for technical advancement				
Vlachos	2021	Customer loyalty	1. Service satisfaction 2. Trust 3. Strategic collaboration in combination with operational collaboration 4. Price satisfaction in combination with strategic collaboration	Qualitative study with expert review for survey and quantitative survey questionnaires	131	Five-point Likert-type scale, source of measures adapted: Lin et al. (2015).	Repurchase intention; recommendation (word-of-mouth); switching costs; exclusiveness.
Kittur and Chatterjee*	2021	Customer loyalty	1. Goods based brand image 2. Service based brand image	Quantitative survey questionnaires	125	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (2 items).

Source: Author.

Table 2.4 Review of B2B customer loyalty studies (2) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Khan et al.	2020	Customer loyalty	1. Customer satisfaction 2. Corporate reputation 3. Company relationship management	Quantitative survey questionnaires	181	Five-point Likert-type scale, source of measures adapted: Boulding et al. (1993) and Coelho and Henseler (2012).	Loyalty (3 items).
Yuan et al.*	2020	Customer loyalty	1. Perceived value	Qualitative study with expert review for survey and quantitative survey questionnaires	273	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996) and Ramaseshan et al. (2013).	Recommendation (3 items, including 1 item of word-of-mouth).
Ruiz-Martinez et al.	2019	Customer loyalty	1. Customer satisfaction	Quantitative survey questionnaires with telephone follow-up	219	Five-point Likert-type scale, source of measures adapted: Daugherty et al. (1998).	Loyalty (2 items).
Almomani	2019	Behavioural customer loyalty Attitudinal customer loyalty	1. Trust 2. Customer satisfaction 3. Commitment 1. Commitment 2. Customer satisfaction 3. Trust	Quantitative survey questionnaires	408	Five-point Likert-type scale, source of measures adapted: Cadogan and Foster (2000), Walsh et al. (2008), Hong and Cho (2011) and Giovanis (2015).	Repurchase intention (5 items); recommendation (5 items, including 1 item of word-of-mouth).
Huang et al.	2019	Customer loyalty	1. Customer satisfaction	Quantitative survey questionnaires	289	Seven-point Likert-type scale, source of measures adapted: Gronholdt et al. (2000).	Repurchase intention (3 items); recommendation (4 items).
Casidy and Nyadzayo	2019	Customer loyalty	1. Relationship value	Qualitative study and quantitative survey questionnaires	324	Seven-point Likert-type scale, source of measures adapted: Tellefsen (2002).	Loyalty (3 items).

Source: Author.

Table 2.5 Review of B2B customer loyalty studies (3) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Paparoidamis et al.*	2019	Customer loyalty	1. Supplier trust (all countries)	Qualitative interviews and expert review for survey and quantitative survey questionnaires	881	Ten-point Likert-type scale, source of measures adapted: Chumpitaz and Pararoidamis (2004) and Lam et al. (2004).	Repurchase intention (2 items); recommendation (2 items, including 1 item of word-of-mouth).
Kim et al.*	2018	Customer loyalty	1. Affective commitment 2. Continuance commitment	Qualitative interviews with expert review for survey and quantitative survey questionnaires	314	Seven-point Likert-type scale, source of measure adapted Čater and Čater (2010) and Hur et al. (2010).	Repurchase intention (2 items); recommendation (2 items, including 1 item of word-of-mouth).
Arslanagic-Kalajdzic and Zabkar	2017	Customer loyalty	1. Satisfaction 2. Emotional value	Qualitative study with expert review for survey and quantitative survey questionnaires	228	Not specified, source of measures adapted: Arnold and Reynolds (2003) and Dagger and O'Brien (2010).	Loyalty (3 items including 1 item of repurchase intention).
Jeong and Oh	2017	Propensity to leave	1. Relationship satisfaction	Qualitative studies and quantitative survey questionnaires	106	Two-point Likert-type scale, source of measures adapted: Morgan and Hunt (1994).	Intention to leave a business relationship (3 items).
Jeong and Oh	2017	Propensity to leave	1. Relationship satisfaction 2. Trust	Qualitative studies and quantitative survey questionnaires	105	Two-point Likert-type scale, source of measures adapted: Morgan and Hunt (1994).	Intention to leave a business relationship (3 items).

Source: Author.

Table 2.6 Review of B2B customer loyalty studies (4) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Mustonen et al.	2016	Customer loyalty	1. Perceived value 2. Green image	Qualitative study with expert review for survey and quantitative survey questionnaires	121	Ten-point Likert-type scale, source of measures adapted: Sirdeshmukh et al. (2002).	Repurchase intention (2 items); recommendation (1 item).
Russo et al.	2016	Customer loyalty	1. Customer satisfaction 2. Customer value 3. Perceived switching costs 4. Product returns management	Quantitative survey questionnaires	317	Seven-point Likert-type scale, source of measures adapted: Blocker et al. (2011).	Repurchase intention (3 items).
Athanasopoulou and Giovanis*	2015	Customer loyalty	1. Relationship quality 2. Responsibility 3. Rapport	Quantitative survey questionnaires administered by interviews**	500	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996) and Fullerton (2003).	Repurchase intention (2 items); recommendation (3 items, including 1 item of word-of-mouth); loyalty (1 item).
Matzler et al.	2015	Behavioural loyalty	1. Customer satisfaction 2. Switching experience 3. Relational switching costs 4. Financial switching costs	Qualitative interviews for survey and quantitative survey questionnaires	327	Five-point Likert-type scale.	Repurchase intention (1 item).

Source: Author.

Table 2.7 Review of B2B customer loyalty studies (5) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Human and Naudé	2014	Attitudinal loyalty	1. Commitment	Qualitative studies and quantitative survey questionnaires	497	Seven-point Likert-type scale, source of measures adapted: Palmatier (2008).	Loyalty (3 items).
Picón et al.	2014	Customer loyalty	1. Customer satisfaction	Quantitative survey questionnaires administered in part by interviews**	785	Seven-point Likert-type scale.	Loyalty (8 items, including 2 items of repurchase intention).
Poujol et al.	2013	Customer loyalty	1. Customer satisfaction 2. Anticipation of future interactions	Quantitative survey questionnaires	130	Five-point Likert-type scale, source of measures adapted: Cannon and Perreault (1999).	Repurchase intention (2 items).
Ramaseshan et al.*	2013	Customer loyalty	1. Trust 2. Relationship equity 3. Value equity	Quantitative survey questionnaires	280	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (2 items); recommendation (3 items, including 1 item of word-of-mouth).
Khan et al.	2012	Behavioural intentions	1. Customer satisfaction 2. Price perceptions	Qualitative interviews and expert review for survey and quantitative survey questionnaires administered by interviews**	500	Five-point Likert-type scale.	Renew (1 item); recommendation (1 item).

Source: Author.

Table 2.8 Review of B2B customer loyalty studies (6) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Mutlu and Taş*	2012	Customer loyalty	1. Trust 2. Customer satisfaction 3. Perceived value 4. Insurance agents' perception of the insurance company's transaction-specific investments	Quantitative survey questionnaires	816	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (number of items not specified).
Mutlu and Taş*	2012	Customer loyalty	1. Trust 2. Customer satisfaction 3. Perceived value	Quantitative survey questionnaires	816	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (number of items not specified).
Blocker et al.	2011	Customer loyalty	1. Customer satisfaction (all countries)	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	800	Seven-point Likert-type scale, source of measures adapted: Doney and Cannon (1997).	Repurchase intention (3 items).
Flint et al.	2011	Customer loyalty	1. Customer satisfaction 2. Customer value anticipation	Qualitative interviews and expert review for survey and quantitative survey questionnaires	404	Five-point Likert-type scale, source of measures adapted: Morgan and Hunt (1994).	Loyalty (3 items).

Source: Author.

Table 2.9 Review of B2B customer loyalty studies (7) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Flint et al.	2011	Customer loyalty	1. Customer satisfaction	Qualitative interviews and expert review for survey and quantitative survey questionnaires	110	Five-point Likert-type scale, source of measures adapted: Morgan and Hunt (1994).	Loyalty (3 items).
Hutchinson et al.	2011	Behavioural intentions	1. Relationship quality 2. Relationship value	Qualitative study with expert review for survey and quantitative survey questionnaires	159	Not specified, source of measures adapted: Eggert and Ulaga (2002) who use a five-point Likert-type scale.	Repurchase intention (3 items); word-of-mouth (3 items, including 1 item of recommendation).
Williams et al.	2011	Behavioural intentions	1. Customer satisfaction 2. Price perceptions	Qualitative study with expert review for survey and quantitative survey questionnaires	948	Five-point Likert-type scale.	Renew (1 item); recommendation (1 item).
Williams et al.	2011	Behavioural intentions	1. Customer satisfaction	Qualitative study with expert review for survey and quantitative survey questionnaires	75	Five-point Likert-type scale.	Renew (1 item); recommendation (1 item).
Čater and Čater*	2010	Behavioural customer loyalty Attitudinal customer loyalty	1. Affective commitment 2. Product quality 3. Negative calculative commitment 1. Affective commitment 2. Product quality	Quantitative survey questionnaires	477	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996) and Lam et al. (2004).	Repurchase intention (2 items); recommendation (2 items, including 1 item of word-of-mouth).

Source: Author.

Table 2.10 Review of B2B customer loyalty studies (8) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Čater and Čater*	2009	Behavioural customer loyalty Attitudinal customer loyalty	1. Customer satisfaction 2. Product quality 3. Direct product costs 1. Customer satisfaction 2. Personal interaction	Qualitative study with expert review for survey and quantitative survey questionnaires	477	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996) and Lam et al. (2004).	Repurchase intention (2 items); recommendation (2 items, including 1 item of word-of-mouth).
Čater and Zabkar*	2009	Customer loyalty	1. Commitment	Nine qualitative interviews and quantitative survey questionnaires administered by interviews**	150	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (1 item); recommendation (2 items, including 1 item of word-of-mouth).
Fiol et al.*	2009	Customer loyalty	1. Customer perceived value 2. Customer satisfaction	Qualitative study with expert review for survey and quantitative survey questionnaires administered partly by interviews**	101	Not specified, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (1 item); recommendation (1 item).
Briggs et al.*	2007	Customer loyalty (patronage)	1. Economic outcomes 2. Social interaction quality	Qualitative study with expert review for survey and quantitative survey questionnaires	110	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (3 items).

Source: Author.

Table 2.11 Review of B2B customer loyalty studies (9) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Caceres and Papariodamis	2007	Customer loyalty	1. Commitment 2. Trust 3. Relationship satisfaction	Qualitative study with expert review for survey and quantitative survey questionnaires	234	Ten-point Likert-type scale.	Repurchase intention (1 item); recommendation (1 item).
Chandrashekaran et al.	2007	Customer loyalty	1. Customer satisfaction	Quantitative survey questionnaires administered by interviews**	25,489	Not specified.	Recommendation (not specified).
Paulssen and Birk	2007	Repurchase intentions	1. Customer satisfaction	Quantitative survey questionnaires administered by interviews**	1,493	Not specified.	Repurchase intention (not specified).
Rauyruen and Miller*	2007	Purchase intentions Attitudinal loyalty	1. Overall service quality 2. Overall satisfaction 1. Overall service quality 2. Affective commitment to supplier 3. Trust in supplier 4. Overall satisfaction	Quantitative survey questionnaires	306	Not specified, source of measures adapted for purchase intention: Gremler and Gwinner (2000), Chaudhuri and Holbrook (2001) and Sirdeshmukh et al. (2002); attitudinal loyalty: Zeithaml et al. (1996).	Repurchase intention (not specified); recommendation (not specified).

Source: Author.

Table 2.12 Review of B2B customer loyalty studies (10) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Whittaker et al.	2007	Repurchase intentions	1. Value 2. Satisfaction	Qualitative study with expert review for survey and quantitative survey questionnaires	78	Seven-point Likert-type scale.	Repeat business (1 item).
Whittaker et al.	2007	Repurchase intentions	1. Epistemic 2. Price/quality	Qualitative study with expert review for survey and quantitative survey questionnaires	78	Seven-point Likert-type scale.	Repeat business (1 item).
Ulaga and Eggert	2006b	Intention to leave a business relationship Intention to expand business with supplier	1. Satisfaction 2. Commitment 1. Satisfaction 2. Commitment 3. Relationship value	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	400	Seven-point Likert-type scale.	Intention to leave a business relationship (3 items); intention to expand business with supplier (4 items).
Abdul-Muhmin	2005	Decrease in the propensity to terminate relationship	1. Relationship satisfaction 2. Relationship commitment	Quantitative survey questionnaires	282	Five-point Likert-type scale, source of measures adapted: Gaski and Nevin (1985) and Abdul-Muhmin (2002).	Decrease in the propensity to terminate relationship (2 items).
Chumpitaz and Paparoidamis	2004	Customer loyalty	1. Relationship satisfaction	Qualitative interviews and expert review for survey and quantitative survey questionnaires	234	Ten-point Likert-type scale.	Repurchase intention (1 item); recommendation (2 items).

Source: Author.

Table 2.13 Review of B2B customer loyalty studies (11) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Kumar and Grisaffe	2004	Behavioural intentions	1. Perceived quality 2. Customer value	Qualitative interviews for survey and quantitative survey questionnaires administered by interviews**	1,419	Not specified.	Repurchase intention (1 item); recommendation (1 item).
Lam et al.*	2004	Customer loyalty (patronage) Customer loyalty (recommend)	1. Switching costs 2. Customer value 3. Customer satisfaction 1. Customer satisfaction 2. Switching costs	Quantitative survey questionnaires	234	Five-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (2 items); recommendation (3 items, including 1 item of word-of-mouth).
Spiteri and Dion	2004	End-user loyalty (hybrid of B2B and B2C)	1. Product benefits 2. Strategic benefits 3. Satisfaction	Delphi method and quantitative survey questionnaires	220	Five-point Likert-type scale, source of measures: Butaney and Wortzel (1988).	End-user loyalty (3 items).
Woo and Ennew*	2004	Behavioural intentions	1. Customer satisfaction	Qualitative interviews and expert review for survey and quantitative survey questionnaires	98	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (2 items); recommendation (3 items, including 1 item of word-of-mouth).
Bolton et al.*	2003	Behavioural intentions	1. Customer perceived value 2. Interpersonal and interorganisational satisfaction	Qualitative study. Plus, qualitative study for survey and quantitative survey questionnaires	387	Seven-point Likert-type scale, source of measures adapted: Zeithaml et al. (1996).	Repurchase intention (2 items); recommendation (1 item).

Source: Author.

Table 2.14 Review of B2B customer loyalty studies (12) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Homburg et al.	2003	Customer loyalty	1. Customer satisfaction 2. Trust 3. Information exchange 4. Joint working 5. Flexibility	Qualitative interviews for survey and quantitative survey questionnaires	981	Not specified.	Intention to repurchase (4 items); intention to expand (3 items).
Wangenheim	2003	Customer loyalty	1. Customer satisfaction	Quantitative survey questionnaires administered by interviews**	418	Not specified, source of measures: Rust and Zahorik (1993), Fornell et al. (1996), Ganesh et al. (2000), Homburg and Giering (2001).	Recommendation (3 items); reaction to price change (2 items).
Eggert and Ulaga	2002	Repurchase intentions Search for alternatives Word-of-mouth	1. Customer perceived value 1. Customer perceived value 1. Customer perceived value	Quantitative survey questionnaires	301	Five-point Likert-type scale.	Repurchase intention (3 items); search for alternatives (2 items); word-of-mouth (3 items, including 1 item of recommendation).
Eggert and Ulaga	2002	Repurchase intentions Search for alternatives Word-of-mouth	1. Customer satisfaction 1. Customer satisfaction 1. Customer satisfaction	Quantitative survey questionnaires	301	Five-point Likert-type scale.	Repurchase intention (3 items); search for alternatives (2 items); word-of-mouth (3 items, including 1 item of recommendation).

Source: Author.

Table 2.15 Review of B2B customer loyalty studies (13) 1997-2022

Studies	Year	Constructs	Antecedents	Methodology	Sample Size	Scale Type	Indicators
Hewett et al.	2002	Repurchase intentions	1. Relationship quality	Quantitative survey questionnaires	247	Not specified, source of measures: Doney and Cannon (1997).	Repurchase intention (2 items).
Lapierre et al.	1999	Behavioural intentions	1. Customer satisfaction	Quantitative survey questionnaires	342	Ten-point Likert-type scale, source of measures adapted: Brown et al. (1993).	Repeat business (1 item); recommendation (1 item).
Patterson and Spreng	1997	Repurchase intentions	1. Satisfaction	Qualitative interviews and expert review for survey and quantitative survey questionnaires	128	Seven-point bipolar adjective scales, source of measures adapted: Fishbein and Ajzen (1975) and Oliver and Swan (1989).	Repeat business (3 items).

Source: Author.

2.9 Antecedents of customer loyalty

2.9.1 Overview

This section's objective is to review the key antecedents of customer loyalty requiring further research and urgent exploration to fill several research gaps. Literature sources, conceptualisation and operationalisation will be discussed for eight antecedents. Firstly, relationship quality (2.9.2) consisting of components customer satisfaction (2.9.3), trust (2.9.4) and commitment (2.9.5) which are considered to have an important impact on long-term B2B relationships (Ulaga and Eggert, 2006b) will be reviewed. Further research on relationship quality in the B2B domain being suggested by Casidy and Nyadzayo (2019).

Moreover, the advancement of relationship marketing has also highlighted the importance of relationship value in understanding business purchasing behaviour. Current B2B research has mostly focused on the functional aspect of relationship value, whereas a multidimensional conceptualisation of relationship value including functional, social and emotional elements has been rarely studied. According to Fiol et al. (2011) analysis of the social and emotional elements of relationship value in B2B literature which support the customer loyalty model in a cluster environment (Fiol et al., 2009, 2.7.4) are scant. More recently, Arslanagic-Kalajdzic and Zabkar (2017) also highlight that both social and emotional relationship value in a B2B context are rarely analysed despite having been shown to play an important role in business relationships (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). As a consequence, further investigation of the impact of social and emotional relationship value on customer satisfaction, behavioural and attitudinal loyalty has been suggested by Arslanagic-Kalajdzic and Zabkar (2017) to fill a literature gap, which this research study will investigate. Consequently, relationship value (2.9.6) incorporating functional relationship value (2.9.7), social relationship value (2.9.8) and emotional relationship value (2.9.9) will be further discussed.

In addition, the key role of customer satisfaction (2.9.3) as a mediating affective variable between relationship value (2.9.6) and customer loyalty has also been confirmed by the mediated impact model (Eggert and Ulaga, 2002, 2.7.2) and the customer value, satisfaction, switching costs and loyalty model (Lam et al., 2004, 2.7.6), further endorsing the need to review these key antecedents of customer loyalty. Hence the next section will discuss the above-mentioned chosen perspectives of conceptualisation in more depth.

2.9.2 Relationship quality

2.9.2.1 Overview

Emerging from the relationship marketing paradigm, relationship quality is recognised as having a key influence on the long-term stability of buyer-seller relationships (Hennig-Thurau and Klee, 1997; Hewett et al., 2002; Ulaga and Eggert, 2006b; Bardauskaite, 2014). In addition, relationship quality has also been closely associated with firm performance (Crosby et al., 1990; Palmatier et al., 2007). While a limited number of studies have explored the effects of relationship quality on customer loyalty (Caceres and Paparoidamis, 2007; Rauyruen and Miller, 2007; Almomani, 2019), further research has been suggested by Woo and Ennew (2004), Jiang et al. (2016) and Casidy and Nyadzayo (2019). Accordingly, this section discusses conceptualisation (2.9.2.2) and operationalisation (2.9.2.3) of this important construct.

2.9.2.2 Conceptualisation

In the literature, although definitions and indicators of relationship quality vary depending on the research study's specific context, according to Ulaga and Eggert (2006b), Rauyren and Miller (2007), Hutchinson et al. (2011) and Jiang et al. (2016) typically, relationship quality is conceptualised as a higher order construct comprising of several distinct, but related dimensions. Prior studies of Dwyer et al. (1987), Crosby et al. (1990), Lagace et al. (1991), Bejou et al. (1996), Shamdasani and Balakishnan (2000), and Hennig-Thurau et al. (2001) confirm the importance of relationship satisfaction and trust as key variables of a higher order construct of relationship quality. The component of relationship commitment has been added as a further dimension of relationship quality by other researchers (Hennig-Thurau and Klee, 1997; Dorsch et al., 1998; Hennig-Thurau et al., 2002; Hewett et al., 2002). Additional components examined include minimal opportunism and ethical profile (Dorsch et al., 1998), customer orientation (Palmer and Bejou, 1995; Dorsch et al., 1998), conflict, willingness to invest and expectation of continuity (Kumar et al., 1995), service quality (Rauyren and Miller, 2007), communication (Storbacka et al., 1994; Leonidou et al., 2013; Jiang et al., 2016), cooperation, adaptation with either atmosphere (Woo and Ennew, 2004; Song et al., 2012) or knowledge transfers (Čater and Čater, 2010), long-term orientation (Jiang et al., 2016), and competence with perceived relationship orientation (Casidy and Nyadzayo, 2019). Despite the variation of additional components studied, the key components of relationship quality that remain important to this study are satisfaction, trust and commitment (affective). Operationalisation of these constructs are discussed next.

2.9.2.3 Operationalisation

From a review of the B2B literature it can be shown that satisfaction, trust and commitment (affective) are the most commonly used dimensions to operationalise the construct of relationship quality (Walter et al., 2003; Ulaga and Eggert, 2006b; Caceres and Paparoidamis, 2007; Palmatier et al., 2007; Skarmeas et al., 2008; Athanasopoulou, 2009; Hutchinson et al., 2011; Ndubisi, 2014; Athanasopoulou and Giovanis, 2015; Almomani, 2019). Each of these key dimensions will be explored in more detail below.

2.9.3 Customer satisfaction

2.9.3.1 Overview

In long-term B2B buyer-seller relationships, satisfaction is identified as one of the key constructs (Geyskens et al., 1999; Abdul-Muhmin, 2005). Its importance has led to increasing attention among academics and business practitioners, due to:

- Satisfied customers can generate higher market share and profit by virtue of a strengthened competitive position (Fornell, 1992);
- Satisfaction is a significant predictor of behavioural outcomes such as repurchase intentions, word-of-mouth, or loyalty (Liljander and Strandvik, 1995; Fornell et al., 1996; Ravald and Grönroos, 1996; Szymanski and Henard, 2001; Spiteri and Dion, 2004; Russell-Bennett et al., 2007; Chen and Wang, 2009);
- Customers that experience satisfaction are less sensitive to price increases and more willing to pay for the reassurance of being satisfied (Murphy and Sashi, 2018);
- For most companies, achieving high customer satisfaction has become a key strategic goal (Homburg et al., 2005; Huang et al., 2019).

Despite its importance, satisfaction research has been conducted mainly in consumer markets, while research on satisfaction in B2B markets is still limited (Patterson et al., 1997; Homburg and Rudolph, 2001; Abdul-Muhmin, 2002, 2005; Sheth and Sharma, 2006; Huang el al., 2019). In addition, according to Jeong and Oh (2017) the literature is scarce of studies assessing the theoretical role of relationship satisfaction in business relationships through social exchange theory. Furthermore, Watson et al. (2015) state that in the B2B domain there is a necessity to present further empirical evidence to substantiate the factors driving satisfaction and its impact on loyalty. As a consequence, further research on relationship satisfaction is suggested by Jeong and Oh (2017) and Ruiz-Martinez et al. (2019), which this research study will investigate. In B2B manufacturing research customer satisfaction has also been identified as the most significant variable of relationship quality and its important role as a mediating affective variable between relationship value and customer loyalty is also confirmed (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b). Against this background, this section addresses conceptualisation of customer satisfaction in terms of its key conceptual dimensions (2.9.3.2) and its operationalisation (2.9.3.3).

2.9.3.2 Conceptualisation

Regarding the first conceptual dimension of customer satisfaction, the B2B literature offers three opposing perspectives:

- The first positions satisfaction as a cognitive-only condition or rational outcome (Smith and Barclay, 1997; Bardauskaite, 2014);
- The second conceptualises satisfaction as an affective evaluative response to a product or service experience, being well supported in the literature (e.g., Eggert and Ulaga, 2002; Lam et al., 2004; Ulaga and Eggert, 2006b; Čater and Čater, 2009; Blocker et al., 2011; Ruiz-Martinez et al., 2019);
- The third postulates satisfaction as a global attitude which captures both the cognitive and emotional assessment of a service or repurchase of a product (Patterson and Spreng, 1997; Caceres and Paparoidamis, 2007; Paulssen and Birk, 2007).

In accordance with the majority of B2B manufacturing research being conducted on the satisfaction construct (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b), this study adopts the affective view and defines customer satisfaction as a positive affective state resulting from the appraisal of all aspects of a firm’s working relationship with another firm (Dwyer et al., 1987; Anderson and Narus, 1990; Ganesan, 1994). Consistent with this perspective, according to Geyskens et al. (1999), satisfaction encompasses of economic and non-economic dimensions. They define economic satisfaction as a ‘positive affective response to the economic rewards that flow from the relationship with its partner, such as sales volume and margins’ (Geyskens et al., 1999: 224), while non-economic satisfaction is a ‘positive affective response to the non-economic, psychosocial aspects of its relationship, in that interactions with the exchange partner are fulfilling, gratifying, and easy’ (Geyskens et al., 1999: 224). In measuring satisfaction, the relative amount of economic and non-economic items on the scale can vary considerably among studies (Geyskens et al., 1999).

The second conceptual dimension addresses the period of observation. In B2B literature, satisfaction is conceptualised in two ways:

- Transaction-specific satisfaction which refers to a customers' feelings in response to a short-term product or service encounter (Flint et al., 2011); and
- Overall or cumulative satisfaction which depicts satisfaction that accumulates across a series of encounters (Cronin and Taylor, 1994; Bolton, 1998; Homburg and Rudolph, 2001; Johnson, 2001; Homburg et al., 2003; Shankar et al., 2003; Chumpitaz and Paparoidamis, 2004; Lam et al., 2004; Paulssen and Birk, 2007; Blocker, 2011; Blocker et al., 2011; Sharma, 2022).

This study focuses on cumulative satisfaction as it is believed to be a better predictor of customers' intentions and behaviour (Bitner and Hubbert, 1994; Rust and Oliver, 1994; Lam et al., 2004; Čater and Čater, 2009).

The third conceptual dimension addresses the timing of observation, whether pre, intra or post. In this case a post-consumption perspective is adopted (Khan et al., 2020). Therefore, in summary, this study conceptualises satisfaction as 'a [customer's] post-purchase evaluation and affective response to the overall product or service experience' (Patterson and Spreng, 1997: 418).

2.9.3.3 Operationalisation

Operationalisation of the satisfaction construct is based on a cumulative case, using non-economic affective items from the already validated B2B services study of Lam et al. (2004), being subsequently adapted to a manufacturing context by Čater and Čater (2009).

2.9.4 Trust

2.9.4.1 Overview

Trust is regarded as a central construct in the development of successful relationships and customer loyalty fulfilment in B2B markets (Abdul-Muhmin, 2005; Rauyren and Miller, 2007). Established in social exchange theory (Morgan and Hunt, 1994; Blois, 1999), trust is described by Wilson (1995: 337) as 'a fundamental relationship model building block and as such is included in most relationship models'. Importantly, Morgan and Hunt (1994) also posit trust as a key-mediating variable in their commitment-trust theory of relationship marketing (Ulaga and Eggert, 2006b; Jeong and Oh, 2017; Hagkhah et al., 2020). Accordingly, this section discusses conceptualisation (2.9.4.2) and operationalisation (2.9.4.3) of this key relationship construct.

2.9.4.2 Conceptualisation

The literature on business services (e.g., Moorman et al., 1993) and distribution channels (e.g., Anderson and Narus, 1990; Morgan and Hunt, 1994) provide varying definitions of trust depending on the research study's specific context. Firstly, trust can be defined as 'a willingness to rely on an exchange partner in whom one has confidence' (Moorman et al., 1993: 82). Additionally, Morgan and Hunt (1994: 23) conceptualise trust as existing 'when one party has confidence in an exchange partner's reliability and integrity'. Both definitions emphasise the relevance of confidence, which results from the trustworthy party being reliable, integral, consistent, competent, honest, fair, responsible, helpful, and benevolent (Rotter, 1971). In comparison, Anderson and Narus (1990: 45) define trust in manufacturer-distributor relationships as 'the firm's belief that another company will perform actions that will result in positive outcomes for the firm as well as not taking unexpected actions that result in negative outcomes'. However, according to Morgan and Hunt (1994) positive outcomes of trust would be expected from a partner who is viewed as integral and could be confidentially relied upon.

Based on these literature definitions, Paparoidamis et al. (2019) argue that benevolence and credibility are the key dimensions of trust (Mayer et al.,1995; Doney and Cannon,1997; Ulaga and Eggert, 2006b; Katsikeas et al., 2009). Benevolence is defined by Abdul-Muhmin (2005: 622) as 'the extent to which a trusted firm is perceived as willing to act in the best interest of a trusting firm, over and above an egocentric profit motive' (Mayer et al.,1995). As a consequence, it reflects the belief by a trusting firm that the trustworthy firm is interested in the focal firm's welfare and will not take any necessary actions that will negatively influence it (Anderson and Weitz, 1989; Anderson and Narus, 1990). Conversely, credibility represents the extent to which a relationship partner keeps to their word (Ganesan, 1994; Morgan and Hunt, 1994).

2.9.4.3 Operationalisation

Operationalisation of the trust construct is based on items identified in the literature, supplier benevolence and credibility (Mayer et al.,1995; Doney and Cannon,1997) and subsequently confirmed in the B2B manufacturing study of Ulaga and Eggert (2006b). Several modified trust scale items from Doney and Cannon's (1997) study have also been validated in a manufacturing context by Čater and Čater (2010).

2.9.5 Commitment

2.9.5.1 Overview

In addition to trust, commitment has been recognised as one of the key variables of appraising relationship quality and interorganisational performance (Mohr and Spekman, 1994; Naudé and Buttle, 2000). Moreover, Morgan and Hunt (1994) argue that commitment is a key-mediating variable of relationship marketing (Ulaga and Eggert, 2006b; Jeong and Oh, 2017; Hagkhah et al., 2020). From the relationship marketing services domain, Berry and Parasuraman (1991: 139) state that 'relationships are built on the foundation of mutual commitment'. Accordingly, this section discusses conceptualisation (2.9.5.2) and operationalisation (2.9.5.3) of this relationship construct.

2.9.5.2 Conceptualisation

From the literature commitment has been defined as 'an enduring desire to maintain a valued relationship' (Moorman et al., 1992: 316). Similarly, Morgan and Hunt (1994: 23) define commitment as 'an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it'. Other researchers suggest that commitment is simply an exchange party's intention of relationship continuation (Dwyer et al., 1987; Anderson and Weitz, 1989; Geyskens et al., 1996). From the literature Gundlach et al. (1995) propose a three-component conceptualisation of commitment consisting of affective, instructural and temporal commitment. Whereas Čater and Čater (2010) consider these dimensions to be affective, calculative and normative commitment (De Ruyter and Semeijn, 2002).

In terms of interorganisational relationships, Morgan and Hunt (1994) state that commitment has been extensively studied in the social exchange literature (Thibaut and Kelley, 1959; Blau, 1964). For example, Cook and Emerson (1978: 728) identify commitment as 'a variable we believe to be central in distinguishing social from economic exchange'. However, grounded in the relationship marketing literature, this study defines affective commitment as 'a desire to develop and strengthen a relationship with another person or group because of familiarity, friendship, and personal confidence built through interpersonal interaction over time' (Sharma et al., 2006: 65).

2.9.5.3 Operationalisation

Operationalisation of the commitment construct is based on items from the already validated B2B manufacturing study of Ulaga and Eggert (2006b).

2.9.6 Relationship value

2.9.6.1 Overview

Eggert and Ulaga (2002) and Ulaga and Eggert (2005, 2006b) state that the exchange view of marketing is established on the value concept (Bagozzi, 1975; Hunt, 1991), a basic component of relationship marketing (Ravald and Grönroos, 1996). ‘Market exchanges take place because all parties involved expect to gain value in the exchange’ (Ulaga, 2003: 678). Within the exchange view of marketing, suppliers produce and deliver goods and services that are embedded in value. The creation of value in use results following the exchange process and occurs within the customer’s domain (Grönroos and Voima, 2013) by combining both the customer’s own resources and the resources captured through the process of exchange (Eggert et al., 2018). From this perspective, the supplier creates and determines value, which is exchanged through the resource integration process taking place within the customer’s domain (Eggert et al., 2018).

Service-dominant (S-D) logic is an alternative theoretical framework for explaining exchange and value creation in markets (Vargo and Lusch, 2004). It has generated interest for both practitioners in industry and academics in the field of marketing (Le Meunier-FitzHugh et al., 2011). S-D logic posits that in order to create value, actors participate in interdependent and reciprocally advantageous service-to-service exchange (Lusch and Vargo, 2014). Hence, as value creation occurs in networks where resources are repeatedly exchanged between multiple actors, it can be more precisely conceptualised as value co-creation in service ecosystems (Vargo et al., 2008; Vargo and Lusch, 2016). The S-D logic of marketing argues that value cannot be distributed to the customer, but instead, value is ‘determined by the customer on the basis of value in use’ (Vargo and Lusch, 2004: 7). Within this perspective the resource integration process moves from the customer’s domain, evident in the exchange view of marketing, to a joint domain involving the customer and supplier. Consequently, with S-D logic, ‘creating value in use becomes the responsibility of the customer and provider firm and both actors share value that is co-created in the use situation’ (Eggert et al., 2018: 82).

This research is based on the exchange view of marketing perspective, where according to Anderson (1995: 349) ‘value creation and value sharing can be regarded as the raison d'être of collaborative customer-supplier relationships’. Therefore, offering superior value to the customer is essential for the creation and maintenance of long-term buyer-supplier relationships (Ravald and Grönroos, 1996; Sharma et al., 2001; Eggert et al., 2006). In addition, Payne and Holt (1999) state that customer value from the viewpoint of relationship marketing is described as relationship value.

However, despite the importance placed on relationship value in the literature, according to Fiol et al. (2011) few studies into the dimensionality of the construct exist in an industrial context (Simon and Mandjak, 2004; Biggemann and Buttle, 2005; Lindgreen and Wynstra, 2005; Ulaga and Eggert, 2005, 2006a; Ruiz-Martinez et al., 2019). Further support comes from Arslanagic-Kalajdzic and Zabkar (2017) who state that prior studies in the B2B domain have mostly focused on the functional element of relationship value only. Both social and emotional relationship value in a B2B context are rarely analysed (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). Additionally, Yuan et al. (2020) argue that any investigation of relationship value should incorporate aspects over and above just the economic and rational. Against this background, this section discusses conceptualisation of relationship value in terms of its key conceptual dimensions (2.7.6.2); and its operationalisation (2.7.6.3).

2.9.6.2 Conceptualisation

Regarding the first conceptual dimension of relationship value, the B2B literature offers an important perspective:

- It postulates value as a ‘cognitive-based construct which captures any benefit-sacrifice discrepancy’ (Patterson and Spreng, 1997: 421). Further literature support comes from the mediated impact model (Eggert and Ulaga, 2002, 2.7.2).

The second conceptual dimension addresses the period of observation. Similar to the conceptualisation of relationship satisfaction, value is conceptualised two ways:

- As a short-term transaction-specific assessment (Patterson and Spreng, 1997). Moreover, Ulaga (2003) and Ulaga and Eggert (2005) state that this approach has been adopted by the majority of value research, overlooking the interpersonal dimensions of relationship value (Dwyer and Tanner, 1999; Parasuraman and Grewal, 2000); and
- As an overall or long-term cumulative encounter which accounts for all factors over the relationship lifetime (Nichols, 2009).

The third conceptual dimension addresses the timing of observation. According to Eggert and Ulaga (2002) relationship value is considered independent of the timing for the product or service offering usage (Woodruff and Gardial, 1996). Hence, ‘perceptions of value may be formed either pre- or post-purchase (or both)’ (Patterson and Spreng, 1997: 421). In this case a post-consumption perspective is adopted.

Finally, from the literature, a summary of prior business and service research on the dimensionality of relationship value is presented in Tables 2.16 and 2.17. A review of these conceptualisations identifies some common dimensions, but the proposed components of relationship value vary appreciably among the definitions (Ulaga, 2003; Lindgreen and Wynstra, 2005; Lindgreen et al, 2012). However, Ulaga and Chacour (2001), Eggert and Ulaga (2002) and Ulaga and Eggert (2005, 2006b) suggest a number of similar elements:

- Value is a subjectively perceived construct (Kortge and Okonkwo, 1993);
- It is conceptualised as a trade-off between benefits and sacifices (Zeithaml, 1998; Monroe, 1990);
- Value can be a multifaceted and complex construct (Grisaffe and Kumar, 1998; Lapierre, 2000; Kumar and Grisaffe, 2004; Whittaker et al., 2007; Fiol et al., 2009, 2011; Ruiz-Martinez et al., 2019); and
- Value perceptions are relative to competition (Gale, 1994; Anderson and Narus, 1999; Briggs and Grisaffe, 2010).

Firstly, regarding the subjective nature of the value concept. Ulaga and Eggert (2006b: 314) posit that ‘different customer segments perceive different values within the same product’. Additionally, the various buying centre members of the customer organisation may also have opposing views of a supplier’s value approach (Perkins, 1993). Secondly, customer value is commonly defined as ‘a ratio or trade-off between total benefits received and total sacrifices’ (Patterson and Spreng, 1997: 416), while Lam et al. (2004) state that value can also be conceptualised as a comparison of weighted ‘get’ attributes to ‘give’ attributes’ (Heskett et al., 1994). Other conceptualisations include benefits being described as the monetary worth of a set of economic, technical, service and social benefits (Anderson et al., 1993); economic, strategic and behavioural benefits (Wilson and Jantrania 1995); episode and relationship benefits (Ravald and Grönroos, 1996) or a core solution and additional services (Grönroos, 1997). In comparison, sacrifices are often described in terms of price (Anderson et al., 1993), episode and relationship sacrifices (Ravald and Grönroos, 1996) or a combination of price and relationship costs (Grönroos, 1997). Moreover, the theory-based research of Möller and Törrönen (2003) identified three dimensions of value based on function, including supplier’s efficiency, effectiveness and network functions. Furthermore, Walter et al’s (2003) research on German manufacturing companies proposed four main drivers of value, namely cost, quality, volume and safeguard as direct functions. Additionally, four indirect functions were also identified, labelled market, scout, innovation and social support functions.

Thirdly, based on calls to enrich conceptualisation (Ulaga and Eggert, 2005; Whittaker et al., 2007, Arslanagic-Kalajdzic and Zabkar, 2017; Ruiz-Martinez et al., 2019), researchers have proposed value as a higher order construct (Hutchinson et al., 2011). As a consequence, grounded in the research of Lapierre (2000), Ulaga (2003), Ulaga and Eggert (2005, 2006a), Blocker (2011) and Blocker et al. (2011), value has been proposed as a multidimensional construct consisting of relationship benefits and relationship sacrifices. The dimensions of relationship benefit comprise of product, service, know-how, time-to-market and social benefits. Whereas the dimensions of relationship sacrifice incorporate price and other relationship related sacrifices.

However, Fiol et al. (2009, 2011) and Arslanagic-Kalajdzic and Zabkar (2017) conceptualised value as a multidimensional construct comprising of three dimensions, functional, social and emotional (Sheth et al., 1991). Whittaker et al. (2007) follow a similar approach, but further add the dimensions of epistemic (Sheth et al., 1991), image and price/quality (LeBlanc and Nguyen, 1999). In addition, Ruiz-Martinez et al. (2019) measure relationship value through three relationship value axes identified as core axis, ICT axis and access axis. The core axis highlights the core benefits of seller support, order delivery, product quality, customisation and personnel training. Whereas the core sacrifices are ICT costs and low quality costs. The ICT axis typically depicts the ICT benefits linked with the utilisation of technology in the exchange, electronic notification and switching cost. In contrast, the access axis characterises social interaction as an important aspect of buyer relationships. Finally, Sharma (2022) presented relationship value in terms of core, technical and social elements. The core component consisted of product quality, delivery and logistics, and costs. The technical component incorporated collaboration for technical advancement, adaptation of product, equipment, process and procedures, information provision and learning benefit. Ease of negotiating, coordinating and making decisions on relationship issues were encompassed in the social item.

From an in-depth literature review of the conceptual dimensions of relationship value, this study defines relationship value in business markets as the perception of the functional, social, and emotional benefits and sacrifices related to a supplier’s offering as recognised by key decision-makers in the buyer’s organisation (Arslanagic-Kalajdzic and Zabkar, 2017).

Table 2.16 Dimensionality of relationship value

Studies	Benefits dimensions	Sacrifice dimensions	Additional information
Anderson et al. (1993); Anderson and Narus (1995, 1999); Anderson et al. (2000)	(Conceived as net benefits, where customer incurred costs to obtain benefits, except price, are included) Econonic benefits Technical benefits Service benefits Social benefits	Price	Theory-based.
Wilson and Jantrania (1995)	Econonic benefits Strategic benefits Behavioral benefits	None	Theory-based.
Ravald and Grönroos (1996)	Episode benefits Relationship benefits	Episode sacrifices Relationship sacrifices	Theory-based.
Grönroos (1997)	Core solution Additional services	Price Relationship costs	Theory-based.
Lapierre (2000)	Product related benefits Service related benefits Relationship related benefits	Price Relationship related sacrifices	Survey of 209 and 129 purchasing managers in the Canadian IT and finance sectors.
Möller and Törrönen (2003)	Efficiency function Effectiveness function Network function		Theory-based.
Ulaga (2003)	Product quality Service support Delivery performance Supplier know-how Time-to-market Personal interaction	Price Process costs	Qualitative interviews with ten purchasing managers in nine US manufacturing companies.
Walter et al. (2003)	Direct functions: Quality Volume Safeguard Indirect functions: Market function Scout function Innovation function Social support function	Direct function: Cost reduction	Survey of 230 purchasing managers in German manufacturing companies.
Ulaga and Eggert (2005)	Product benefits Service benefits Know-how benefits Time-to-market benefits Social benefits	Price Process costs	Survey of 207 purchasing managers in French manufacturing companies.
Ulaga and Eggert (2006a)	Product quality Service support Delivery performance Supplier know-how Time-to-market Personal interaction	Direct costs (price) Acquisition costs Operation costs	Qualitative interviews with ten purchasing managers in nine US manufacturing companies and survey of 400 purchasing managers in US manufacturing companies.

Source: Ulaga (2003: 679), Ulaga and Eggert (2005: 78) and Ulaga and Eggert (2006a).

Table 2.17 Dimensionality of relationship value (2)

Studies	Value dimensions	Additional information
Whittaker et al. (2007)	Functional Social Emotional Epistemic Price/Quality Image	Survey of 78 senior marketing staff of UK based clients of external consulting firms.
Fiol et al. (2009)	Functional Social Emotional	Survey of 101 purchasing managers in Spanish manufacturing companies administered by interviews.
Blocker (2011)	Product quality Service support Personal interaction Supplier know-how Direct costs (price) Acquisition costs Operation costs	Survey of 800 business managers in India, Singapore, Sweden, UK and US.
Blocker et al. (2011)	Product quality Service support Personal interaction	Qualitative interviews with ten managers and survey of 800 business managers in India, Singapore, Sweden, UK and US.
Fiol et al. (2011)	Functional Social Emotional	Survey of 101 purchasing managers in Spanish manufacturing companies administered by interviews.
Arslanagic-Kalajdzic and Zabkar (2017)	Functional Social Emotional	Survey of 228 CEOs and marketing managers of Central European based clients of advertising agencies.
Ruiz-Martinez et al. (2019)	Seller support Order delivery Product quality Customisation Personnel training ICT costs Low quality costs Utilisation of technology in the exchange Electronic notification Switching cost Social interaction	Survey of 219 purchasing managers of Spanish retailers.
Sharma (2022)	Core Technical Social	Qualitative interviews with ten managers and survey of 127 senior purchasing executives in India.

Source: Author.

2.9.6.3 Operationalisation

Based on the previous research of Fiol et al. (2009, 2011) and Arslanagic-Kalajdzic and Zabkar (2017), the relationship value construct can be operationalised as a multidimensional construct comprising of three dimensions, functional, social and emotional (Sheth et al., 1991). Each of these dimensions will be investigated in more detail.

2.9.7 Functional relationship value

2.9.7.1 Overview

Functional value is the most commonly investigated relationship value dimension in the B2B literature (Arslanagic-Kalajdzic and Zabkar 2017). The functional dimension of value relates to the utility gained from the attributes of the products and services (Fiol et al., 2009, 2011). Attributes from which the industrial customer obtains value are product quality, service quality, or price (Sweeney et al., 1999). According to Anderson et al. (1993) this perspective is considered to be an economic and logical analysis comparing benefits and sacifices. Furthermore, consumption value theory (Sheth et al., 1991; Arslanagic-Kalajdzic and Zabkar, 2017) identifies the functional value dimension as a key influencer of customer purchasing behaviour. Conceptualisation (2.9.7.2) and operationalisation (2.9.7.3) of this construct are discussed in the section below.

2.9.7.2 Conceptualisation

From the literature, the functional dimension consists of positive values or benefits including the quality of the product and services, and negative values or sacrifices such as price and other-monetary sacrifices (Berry et al., 2002). In the B2B domain, product benefits are considered central to the exchange process (Homburg and Rudolph, 2001; Ulaga and Chacour, 2001; Spiteri and Dion, 2004; Chakraborty et al., 2007). Previous relationship value research has supported this principle, but expressed product benefits in varying terms. For example, product related benefits are reflected as economic and technical benefits (Anderson et al.,1993); economic value (Wilson and Jantrania, 1995); a core solution (Grönroos, 1997) or product quality (Lapierre, 2000; Ulaga, 2003; Walter et al., 2003; Ulaga and Eggert, 2005, 2006a; Blocker, 2011; Blocker et al., 2011; Ruiz-Martinez et al., 2019). In addition, Abdul-Muhmin (2005) states that product quality is a critially important criterion in purchasing decisions of industrial goods (Wilson, 1994). Accordingly, Kristianto et al. (2012: 31) define quality in terms of its ‘fitness for use’ and ‘conformance to requirements’. Therefore, against this background and consistent with prior research of Juran (1974), Crosby (1979) and Ulaga and Chacour (2001), product quality is defined as ‘the extent to which the supplier’s product meets the customer’s specifications’ (Ulaga, 2003: 683).

Delivery performance is also viewed as an integral part of relationship benefits (Ulaga, 2003). The business marketing literature describes delivery as a major factor in the evaluation of suppliers (Hutt and Speh, 2001). The importance of delivery performance as a source of added value to the supply chain in the manufacturing industry has also been identified in the literature by Ulaga and Eggert (2006a). Suppliers create value by continually achieving delivery schedules, being able to adjust to changes in delivery plans by holding safety stock, and constantly delivering the right parts (Ulaga and Eggert, 2006a). Further support for accurate order delivery times is highlighted by the B2B research on relationship value benefits of Ruiz-Martinez et al. (2019).

In buyer-supplier relationships, Cannon and Homburg (2001) identify direct product costs as an important sacrifice dimension. Ulaga and Eggert (2005: 81) state that direct product costs are defined as 'the actual price charged by the supplier for the main products sold to a customer firm'. In addition to price reductions highlighted by Walter et al. (2003), Cannon and Homburg (2001) argue that relationship collaboration by firms will drive overall operational improvements. As a consequence, Ulaga (2003), Ulaga and Eggert (2005) and Hutchinson et al. (2011) propose processing costs such as order-handling, transportation, inventory management, referred to as acquisition costs, and operation costs as a further sacrifice dimension. Additional literature support for price as a key sacrifice dimension comes from the theory-based study of Anderson et al. (1993). Moreover, Grönroos (1997) and Lapierre (2000) categorise between price and other relationship costs in their relationship value research. Finally, Ulaga and Eggert (2006a) find empirical support for price, acquisition, and operation costs as sacrifice dimensions in a B2B manufacturing study. In accordance with the majority of value literature, relationship sacrifice in the B2B domain consists mainly of the key dimension of price charged by the supplier.

As a consequence, from a review of the literature, functional relationship value is defined as the utility derived from the perceived product quality, expected delivery performance of the product, and the perceived product costs related to a supplier's offering as recognised by key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).

2.9.7.3 Operationalisation

Operationalisation of the functional relationship value construct is based on the items of product quality, delivery performance and price from the already validated B2B manufacturing studies of Ulaga and Eggert (2006a).

2.9.8 Social relationship value

2.9.8.1 Overview

Social relationship value has been shown to play an important role in complex business relationships (Prior, 2013). Moreover, theoretical support for social values impact on customer buying behaviour comes from the theory of consumption values (Sheth et al., 1991; Arslanagic-Kalajdzic and Zabkar, 2017). Despite its importance, social value has been rarely analysed in the B2B domain (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). Accordingly, this section discusses conceptualisation (2.9.8.2) and operationalisation (2.9.8.3) of this construct.

2.9.8.2 Conceptualisation

Social value refers to the social perspective of the firm (Fiol et al., 2009). In the B2B domain, both image and reputation of a company are highlighted as important in the decision-making process (Fiol et al., 2011). In addition, Allee (2000) suggests that social citizenship and corporate identity should be incorporated within relationship value. Moreover, Nguyen and LeBlanc (2001) identify the dimensions underlying social value as social image and corporate reputation. Therefore, the social image presented together with reputation materialise as the two key factors of social value (Ganesan, 1994; Nguyen and LeBlanc, 2001; Fiol et al., 2009, 2011). Consequently, social relationship value is defined as the utility derived from the positive impression and social approval of the supplier firm (Arslanagic-Kalajdzic and Zabkar, 2017).

2.9.8.3 Operationalisation

Operationalisation of the social relationship value construct is based on items of social image and reputation from the already validated B2B manufacturing studies of Fiol et al. (2009, 2011).

2.9.9 Emotional relationship value

2.9.9.1 Overview

The literature offers evidence that emotions play a prominent role in understanding business purchasing behaviour (Lynch and De Chernatory, 2004; Hansen et al., 2008; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). Further theoretical support for emotional value having an influence on consumers buying choice is highlighted by consumption value theory (Sheth et al., 1991; Arslanagic-Kalajdzic and Zabkar, 2017). However, few studies have concentrated on the emotional dimension in B2B research (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). Accordingly, this section discusses conceptualisation (2.9.9.2) and operationalisation (2.9.9.3) of this relationship value construct.

2.9.9.2 Conceptualisation

The emotional dimension of relationship value originates from the feelings and emotions that the product or service provokes in the buyer (Fiol et al., 2011). From the literature, Fiol et al. (2009, 2011) defines three factors supporting the emotional dimension of relationship value:

- Experience (Brown et al., 1995; Sweeney and Soutar, 2001);
- Personalised treatment (Barnes, 2003); and
- Interpersonal relationships (Ulaga, 2003; Ulaga and Eggert, 2005, 2006a).

Accumulated *experience* is a result of the reciprocation of both aural and visual stimuli, information and emotions between customers and companies (Schmitt, 1999; Sweeney and Soutar, 2001). According to Fiol et al. (2009, 2011) this supersedes the established stimuli based on monetary rewards, in both the consumer markets (Holbrook and Hirschmann, 1982; Schmitt, 1999), and industrial markets (Brown et al., 1995). *Personalised treatment* draws on the literature that analyses the psychological and social benefits of a relationship (Gwinner et al., 1998; Ford and McDowell, 1999; Barnes, 2003). Henning-Thurau and Hansen (2000) argue that personalised treatment is one of the key elements that customers value in association with firms. Further evidence comes from Price et al. (1995) and Henning-Thurau et al. (2002) who acknowledge that in business relationships personalised treatment helps to reduce the feeling of anxiety and generates a more calmer state due to familiarity.

In terms of *interpersonal relationships*, B2B relationships are established between organisations, and individuals develop and maintain them (Ulaga, 2003; Ulaga and Eggert, 2005). In reality, people make a relationship work or fail (Wilson and Jantrania, 1995). Additionally, personal relationships are viewed as an important aspect of the purchasing process by buyers (Dwyer and Tanner, 1999). Further literature support comes from Wilson and Jantrania (1995) who identify behavioural benefits as a component of relationship value. Moreover, personal interaction is also highlighted as a key relationship dimension in the business and service domain (Anderson et al.,1993; Lapierre, 2000; Ulaga, 2003; Walter et al., 2003; Ulaga and Eggert, 2005, 2006a; Blocker, 2011 and Blocker et al., 2011).

Finally, in a B2B market, Weitz and Bradford (1999: 241) describe the sales representative's role 'as the primary link between the buying and selling firms, they have considerable influence on the buyer's perceptions of the value of the seller's services and consequently the buyer's interest in continuing the relationship'. As a consequence, personal interaction includes maintaining relationships with the supplier's key contact personnel and building a rapport with the vendor's sales representatives (Ulaga and Eggert, 2006a). From a review of the literature, emotional relationship value is defined as the utility derived from the feelings that a product generates for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).

2.9.9.3 Operationalisation

Operationalisation of the emotional relationship value construct is based on items of experience, personalised treatment and interpersonal relationships from the already validated B2B manufacturing studies of Fiol et al. (2009, 2011).

This section reviewed literature sources, conceptualisation and operationalisation of eight key antecedents of customer loyalty requiring further research and urgent exploration to fill several research gaps. The next section will review a key moderator of the satisfaction-link, duration of the relationship, which will also fill a gap in the literature.

2.10 Moderators

2.10.1 Overview

A moderator acts to improve the effects of a predictor variable on a criterion (MacKinnon, 2008). The key moderator variable of relationship age has been identified from the literature that influences the satisfaction-loyalty link and will fill a research gap (Wangenheim, 2003; Čater and Čater, 2009; Poujol et al., 2013). Important to this study, relationship age is central to business relationship exchange and will be discussed in the section below.

2.10.2 Duration of the relationship

Duration of the relationship is defined as the length of the buyer-seller relationship (Grayson and Ambler, 1999; Homburg et al., 2003; Wangenheim, 2003; Chandrashekaran et al., 2007; Arslanagic-Kalajdzic and Zabkar, 2017). This moderator variable is important in industrial markets as relationships tend to be longer than those in consumer markets due to extended investment cycles of industrial products (Mustonen et al., 2016). From the literature there is evidence that supports the belief that relationship age is positively related to the appraisal of a partner (Swann and Gill, 1997; Scheer et al., 2009). Moreover, researchers have argued that as relationships mature these assessments change (Dwyer et al., 1987), and customers uncover further benefits from the relationship, contributing to stronger loyalty (Scheer et al., 2009). From prior research it has been shown that the link between customer satisfaction and loyalty is strengthened with relationship age (Garbarino and Johnson, 1999; Wangenheim, 2003; Chandrashekaran et al., 2007; Raimondo et al., 2008).

2.11 Conclusion and summary

This chapter provides a critical evaluation of prior literature on the nature and antecedents of customer loyalty in the B2B domain. In nine sections, it serves to introduce:

- The concept of loyalty in order to provide an in-depth understanding of loyalty within the scope of relationship marketing theory, emphasising its importance. Social exchange and consumption theories are also highlighted as additional bodies of theory emerging from the concept of loyalty. Moreover, a critique of previous loyalty research results in a new perspective on customer loyalty which this study will explore (2.2);
- The main components of loyalty, namely, behavioural, attitudinal, cognitive and composite loyalty to better understand the explanatory power of the loyalty construct, leading to a postulated composite loyalty approach including both behavioural and attitudinal components (2.3);
- Customer loyalty concepts from a relationship marketing literature perspective, generating a definition of loyalty for this research study based on a composite loyalty approach (2.4);
- TRA in order to provide a theoretical underpinning of the framework for this research study (2.5);
- The UK manufacturing industry and the relevance of customer loyalty in B2B manufacturing, underlining their importance to this research (2.6);
- The key B2B models of customer loyalty providing support for a composite loyalty approach, TRA as the theoretical framework for this study, and incorporation of both behavioural and attitudinal dimensions in loyalty measurement. Moreover, the important role of customer satisfaction as a mediating affective variable between relationship value and customer loyalty is also confirmed. Additionally, model limitations also provide the justification for further research on the key constructs of social and emotional relationship value, and moderator variable of duration of the relationship (2.7);
- The measurement of loyalty, postulating multi-item measures of both the behavioural and attitudinal elements of the loyalty construct (2.8);
- The conceptualisation and operationalisation of eight important constructs requiring further research and urgent investigation to fill several research gaps including relationship quality, customer satisfaction, trust, commitment, relationship value,

functional relationship value, social relationship value and emotional relationship value (2.9);

- The key moderator variable of relationship age which requires further research and its influence on the satisfaction-loyalty link which will fill a gap in the literature (2.10).

By reviewing and critiquing the B2B loyalty literature, several research gaps have been identified. The customer loyalty model in a cluster manufacturing environment of Fiol et al. (2009: 2.7.4) highlights that analysis of the social and emotional elements of relationship value in the B2B literature which support this model are scant (Fiol et al., 2011). Following a similar theme, more recently, Arslanagic-Kalajdzic and Zabkar (2017) also underline that both social and emotional relationship value in a B2B context are rarely analysed despite having been shown to play an important role in business relationships (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). As a consequence, further investigation of the impact of social and emotional relationship value on customer satisfaction, behavioural and attitudinal loyalty has been suggested by Arslanagic-Kalajdzic and Zabkar (2017) to fill a literature gap, which will be investigated by this study. The research will provide a new theoretical perspective on B2B customer loyalty in the manufacturing industry by focusing on social perceptions and emotions of relationship value and their impact on customer satisfaction, behavioural and attitudinal components of loyalty.

Furthermore, Čater and Čater (2009) suggest that further research is required on the moderator variable of duration of the relationship. This variable has been shown to be an important industrial moderator influencing the B2B satisfaction-loyalty link (Wangenheim, 2003; Chandrashekaran et al., 2007). Therefore, to provide new insights into the relationships affecting B2B customer loyalty in the manufacturing industry, the moderator variable of relationship age will be investigated to understand its impact on the satisfaction, behavioural and attitudinal loyalty links.

As a result of this research study, both practitioners in the manufacturing industry and academics in the field of relationship marketing will benefit from a new perspective on the antecedents of B2B customer loyalty in the manufacturing industry. The next chapter will discuss the methodology for this study.

3 Methodology

3.1 Introduction and overview

This chapter aims to detail the research design and methodological approach for this study based on the findings of the literature review (*Chapter Two*).

It discusses four key issues which include the theoretical aspects of research design (3.2), research approach (3.3), data collection and analysis process for stage 1: qualitative study (3.4) and finally, data collection and analysis process for stage 2: quantitative study (3.5).

3.2 Theoretical aspects of research design

3.2.1 Overview

The relationship between theory and data is an issue that has been discussed among philosophers over many centuries. Most of the central deliberations among the philosophers involve matters of ontology and epistemology. ‘Ontology is about the nature of reality and existence, [whereas] epistemology is about the best ways of enquiring into the nature of the world’ (Easterby-Smith et al., 2013: 17). Researchers typically draw from different ontological and epistemological beliefs based on their past experiences when developing methodologies for carrying out research. These philosophical issues remain important as they can affect the quality of research and are pivotal to the research design (Easterby-Smith et al., 2013).

However, both philosophical and practical issues can also handicap researchers’ efforts to test theories conclusively (Miller and Tsang, 2010). In the social sciences, ‘it is unrealistic to assume that all relevant data will be consistent with a theory even if the theory is correct’ (Lieberson, 1992: 7). There are a number of facets that make theory testing more challenging in the social sciences compared to the natural sciences. Firstly, organisations are not simple, but diverse, complex, and forever changing social entities (Astley and Van de Ven, 1983; Fabian, 2000). Secondly, the component of personal volition in human behaviour, can also impact theory testing. Child (1972) argues that decision makers in the organisation are not passive, but free to choose and take actions that reflect their organisations’ domains. Finally, problems associated with beliefs and practices of researchers can also be encountered (Miller and Tsang, 2010). For example, inaccurately articulating theories impedes empirical testing (Astley and Zammuto, 1992). ‘Verifying or falsifying evidence remains disputable due to differing beliefs about what constitutes relevant evidence and how such evidence should be collected and analysed' (Miller and Tsang, 2010: 139).

These particular issues have led management researchers to focus more on building theories (Locke, 2007), than testing them (Hambrick, 2007). Moreover, many empirical research studies in management still use correlational methods without directly testing the explanatory mechanisms suggested by theory (Bromiley and Johnson, 2005; Tsang, 2006). As a result, this has led to researchers failing to test theories rigorously enough (Miller and Tsang, 2010).

This may help to explain the evolving debate regarding the philosophy of science in the marketing discipline (Easton, 2002). The main focus has been about the particular virtues of two contrasting views of conducting social science research, positivism and social constructionism/interpretivism (Easterby-Smith et al., 2013). Table 3.1 shows the contrasting implications of these two different paradigms.

Table 3.1 Contrasting Implications of Positivism and Social Constructivism/Interpretivism

Criteria	Positivism	Social Constructionism/Interpretivism
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progresses through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be defined so that they can be measured	Should incorporate stakeholder perspectives
Units of analysis	Should be reduced to simplest terms	May include the complexity of 'whole' situations
Generalization through	Statistical probability	Theoretical abstraction
Sampling requires	Large numbers selected randomly (quantitative)	Small numbers of cases chosen for specific reasons (qualitative)

Source: Easterby-Smith et al. (2013: 24).

The viewpoint of positivism is that an external social world exists, and that its properties can be measured through objective methods, instead of being implied subjectively (Easterby-Smith et al., 2013). As a result, positivism in the social sciences is often depicted by a quantitative approach. In this case the research proceeds based on current theory and then forms hypotheses which allow testing of the theory, this approach is aligned to a deductive research strategy.

In contrast, as a reaction to positivism, during the last 50 years philosophers have developed a new paradigm of social constructionism which comes from the view that 'reality' is not external and objective, but is socially constructed and people give it meaning (Easterby-Smth et al., 2013). Working from a social constructive perspective, new theory is generated from the data collected through qualitative research. This method is associated with an inductive research strategy.

In the early 1990s realism was highlighted as important to the marketing domain (Easton, 2002). Derived from positivism, realism accepts objectivity and truth, but also acknowledges that there are additional complexities of meaning given by people. However, a specific issue for realism is that there are many different versions (Hunt, 1991). One particular position of realism is transcendental or critical realism (Bhaskar, 1978; Sayer, 1992), which will be discussed in the next section.

3.2.2 Critical realist philosophy

A growing academic movement in the social sciences is critical realism (Cruickshank, 2003), particularly in the field of marketing (Hunt, 1992; Easton, 2002). This section discusses some of the key elements of critical realism including its ontology, epistemology, dependency upon explanations stated in terms of mechanisms, and viewpoint that reality is stratified.

Critical realism establishes a link between ontology and epistemology. It posits a realist ontology, that characterises 'the existence of a world independent of researchers' knowledge of it' (Miller and Tsang, 2010: 144). In addition, it supports a fallibilist epistemology in which 'researchers' knowledge of the world is socially produced' (Miller and Tsang, 2010: 144). These two assertions form the basis of the need and possibility for critical evaluation of theories and are the key focus of the critical realist philosophy of science. As Bhaskar (2008: 43) states 'to be a fallibilist about knowledge, it is necessary to be a realist about things'.

Sayer (1992: 5) offers eight indicators that he believes depict critical realism:

1. 'The world exists independently of our knowledge of it;
2. Our knowledge of the world is fallible and theory-laden. Concepts of truth and falsity fail to provide a coherent view of the relationship between knowledge and its object;
3. Knowledge develops neither wholly continuously, as the steady accumulation of facts within a stable conceptual framework, nor discontinuously, through simultaneous and universal changes in concepts;
4. There is necessity in the world; objects - whether natural or social - necessarily have particular powers or ways of acting and particular susceptibilities;

5. The world is differentiated and stratified, consisting not only of events, but objects, including structures, which have powers and liabilities capable of generating events;
6. Social phenomena such as actions, texts, and institutions are concept-dependent;
7. Science or the production of any kind of knowledge is a social practice;
8. Social science must be critical of its object. In order to be able to explain and understand social phenomena, we have to evaluate them critically'.

Three of the indicators (1, 2 and 8) are prevalent to most forms of realism (Sayer, 1992) and are further support by Hunt (1991). However, critical realism symbolises a number of more compelling ontological assumptions about the nature of reality that provide a more articulated view of its nature (Easton, 2002). In particular, indicators (4) and (5) introduce two key aspects of critical realism, its dependence upon explanations stated in terms of mechanisms and its portrayal of a stratified view of reality, which will be discussed in the rest of the section below.

A critical realist perspective will be adopted for this research study. According to Miller and Tsang (2010: 144) a critical realist perspective 'affirms the possibility of truthful knowing but acknowledges that human limitations undermine claims to indubitable or objective knowledge'. The author of this study was previously educated as a chemical engineer and initially worked in production management in the manufacturing industry where the output was something that could always be quantifiable. Following completion of a master's degree in business administration, the researcher moved into marketing. The author currently works in the field of B2B marketing for an international manufacturing company where the results of marketing campaigns are measurable and impact the overall performance of the business. This perspective means that the author operates within the positivist paradigm. However, the author believes that there are clear distinctions between the observed and real world. The observed world that we know and comprehend is constructed through our experiences and views. Whereas the real world which cannot be directly observed exists independent from human understandings. In the social world these realities co-exist. The world is bound by both natural phenomena, such as scientific laws, and social actors that construct the world in ways that give meaning.

A further important aspect of critical realism is its dependence upon explanations stated in terms of mechanisms. 'A mechanism is basically the way of acting or working of a structured thing' Lawson (1997: 21). Bhaskar (2008) categorises three domains of reality, the empirical, actual and real. The *empirical* domain is made up of events that may be observed. The *actual* domain consists of events that may or may not be experienced through mechanisms. However, critical realism characterises a world consisting of 'not only of events, but objects, including structures, which have powers and liabilities capable of generating events' (Sayer, 1992: 5). Hence, the *real* domain comprises of objects, including structures and mechanisms that generally govern all of these events.

Within critical realism, 'to theorize is to propose mechanisms that explain these events' (Miller and Tsang, 2010: 146). To identify mechanisms a retroductive research strategy is deployed (Zachariadis et al., 2013). 'Retroduction is the mode of inferential reasoning that reconstructs the conditions for the occurrence of an empirical phenomenon' (Miller and Tsang, 2010: 146). This involves the building of hypothetical models as a way of resembling the real structures and mechanisms that control events. Through this approach knowledge is generated by an iterative process whereby inductive and deductive research strategies contribute to better understanding of the phenomenon.

Another key element of the critical realist philosophy is that it portrays a stratified view of reality. The operation of mechanisms in each stratum are unique, with the possibility of displaying properties that are not explainable operating at other levels (Miller and Tsang, 2010). This supports testing for theories by examining mechanisms at the level of analysis at which they are present, as a result reflecting the appropriate emergent properties that would be otherwise lost by examination of mechanisms at a lower level (Miller and Tsang, 2010).

This section describes some key elements of the critical realist philosophy as applied to this research study. It postulates a realist ontology and fallibilist epistemology, and draws attention to its emphasis on a retroductive research strategy. Based on these assumptions the next section discusses research methods and how this philosophy of science is translated into four actionable research steps for theory testing.

3.2.3 Research methods

Critical realism is highly pluralist in respect of research methods (Miller and Tsang, 2010). Since differing research methods concentrate on different facets of reality, a more detailed understanding of the phenomena under study can be achieved by combining methods (Mingers, 2001). Important to this study, critical realism supports a mixed methods approach using both qualitative and quantitative methods (Miller and Tsang, 2010; Zachariadis et al., 2013), because aspects may be over looked by using just one research approach (Mingers, 2006). Triangulation of different sources of data provides logical justification for the evidence obtained from the individual research methods.

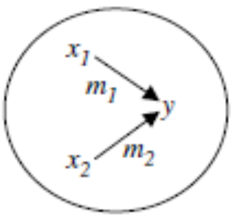
However, as Danermark et al. (2002: 150) postulate 'critical realism is not a method'. Acknowledging this fact, Miller and Tsang (2010) suggest several well-established research methods that facilitate management theory testing from a critical realist perspective. These four steps of testing theory are:

- Identifying the causal mechanisms thought to represent the hypothesised relationships in the research study by using qualitative methods at the interface of theory and the field of interest;
- Testing to see if the proposed mechanisms are present in the research setting. Failure to substantiate the presence of the proposed mechanisms provides support to renounce a theory's arguments. However, if the evidence confirms the presence of the mechanisms them move to;
- Testing binary or subsets of the causal relationships prior to;
- Testing the complete conceptual framework.

Considering a simple theory where the hypothesised mechanisms (m), link variables x to y, Figure 3.1 highlights the four steps of theory testing. The hypothesised mechanisms, m_1 and m_2 link x_1 and x_2, respectively, to y. The important distinction between the parameters relating x_1 and x_2 to y (designated β_1 and β_2 in step 4), and the mechanisms themselves, m_1 and m_2 is emphasised (Miller and Tsang, 2010). The circle surrounding the path diagram depicts the explicit or implicit *ceteris paribus* condition, which shows the theoretical system as closed (Miller and Tsang, 2010).

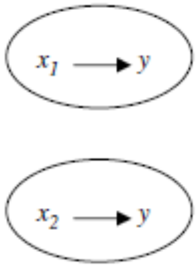
Figure 3.1 Steps in a critical realist approach to testing theories

Step 1: Identify the hypothesised mechanisms.

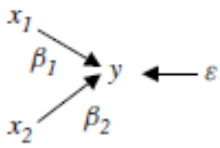


Step 2: Test for the presence of the mechanisms in the empirical setting.

Step 3: Test isolated causal relations.



Step 4: Test the theoretical system.



Source: Miller and Tsang (2010: 148).

The goal of researchers evaluating theories is to offer ‘judgements of superiority and inferiority’ (Sayer, 1992: 206). Miller and Tsang (2010) propose an integrative research process for testing theory to advance knowledge from a critical realist perspective, which will be adopted for this mixed methods research study.

This section discusses the important connection between the researcher’s philosophical position, the research strategy and methodology chosen for this study and the assertions to contribution to knowledge that will be the outcome of this research.

3.3 Research approach

3.3.1 Overview

A mixed methods research approach using both qualitative (stage 1) and quantitative (stage 2) methods is important to this study. By employing both qualitative and quantitative research and data, the research study will gain a more in-depth understanding of the factors driving B2B customer loyalty in the UK manufacturing industry, while counteracting the weaknesses inherent to using each approach individually.

Hurmerinta-Peltomaki and Nummela’s (2006) research considered the value of mixed methods in the business domain by reviewing the literature in the field. They identified that mixed methods added value by increasing validity in the findings, informing the collection of the second data source, and assisting with the creation of new knowledge (McKim, 2017). Hurmerinta-Peltomaki and Nummela (2006) argue that research studies using mixed methods gain a deeper, broader understanding of the subject under review than studies which utilise a separate qualitative or quantitative approach ((McKim, 2017).

Another important aspect of mixed methods research is integration (McKim, 2017). 'Integration [is] the interaction or conversation between the qualitative and quantitative components of a study' (O'Cathain et al., 2010: 1147). Integration gives more confidence in the research results and the conclusions drawn from the study (O'Cathain et al., 2010). Furthermore, a mixed method approach is the only way to be sure of the findings (Coyle and Williams, 2000) and their interpretation (Tashakkori and Teddlie, 2003).

Another key advantage of conducting mixed methods research is the possibility of triangulation. i.e., the use of several mechanisms (methods and data sources) to investigate the same phenomenon (Jick, 1979). Triangulation is defined by Denzin (1978: 291) as 'the combination of methodologies in the study of the same phenomenon.' According to Noble and Heale (2019) triangulation refers to the process that aids the credibility and validity of the research. Thereby, triangulation aims to validate the results of a research study. Although, triangulation can make use of a mixed methods approach to achieve the goal of validating the research findings, it is not the same as mixed methods (Bans-Akutey and Tiimub, 2021). Triangulation depicts the use of all the multiple approaches in the research study to extract the required information as well as critically analysing findings, hence corroborating validity and credibility ((Bans-Akutey and Tiimub, 2021). As a result, triangulation will allow for the identification of customer loyalty aspects more insightfully by approaching it from several directions using different research methods and techniques.

However, a mixed methods approach does have limitations. As mixed methods research involves collecting and analysing two different types of data this requires additional time (Creswell and Plano Clark, 2007). Moreover, it also requires knowledge of both qualitative and quantitative methodology (McKim, 2017).

This research study will adopt an exploratory sequential mixed methods design where a qualitative phase will feed into the main quantitative phase (Tashakkori and Teddlie, 1998; Creswell, 2014), outlined in Figure 3.2. The researcher first starts by exploring with qualitative data and analysis and then uses the findings in a second quantitative phase (Creswell, 2014). The exploratory qualitative phase seeks 'to see the research topic from the perspective of the interviewee [practitioner] and to understand how and why they come to have this particular perspective' (Cassell and Symon, 2004: 11). Conducting exploratory research with domain experts from the manufacturing industry is consistent with the research of Homburg and Rudolph (2001), Ulaga (2003), and Ulaga and Eggert (2006a, 2006b). Moreover, four studies presented in Tables 2.3 to 2.15 have also used qualitative interviews to conduct exploratory research in the B2B domain before carrying out the more dominant quantitative study (Ulaga and Eggert, 2006b; Čater and Zabkar, 2009; Blocker et al., 2011; Sharma 2022).

Figure 3.2 Sequential design with qualitative findings feeding into quantitative phase

Source: Tashakkori and Teddlie (1998).

The purpose of the qualitative interviews will be to give further support to the new hypotheses and constructs used in the conceptual framework (*Chapter Four*) which are anchored on the literature. In addition, the exploratory research will also shed some new light on the topic that can be incorporated into the study. Based on the outcome of the qualitative phase (*Chapter Four)* and the literature review (*Chapter Two*), the conceptual framework and hypothesis set will be developed in *Chapter Four* before moving to the main quantitative phase. For stage 2, survey questionnaires will be pre-tested and administered by telephone interviews with participants employed in manufacturing firms in the UK to generate the research study findings. The data collection and analysis of the qualitative stage will be discussed next.

3.4 Data collection and analysis process for stage 1: qualitative study

3.4.1 Overview

This section reviews the data collection and analysis strategy for the qualitative study (stage 1) to provide an understanding of the process for the first phase of data collection and analysis.

3.4.1.1 Interview sample size

From the literature Tables 2.3 to 2.15 present four B2B loyalty research studies of Ulaga and Eggert (2006b), Čater and Zabkar (2009), Blocker et al. (2011) and Sharma (2022) that deploy an interview sample size of nine or ten, consistent with the sample size recommended for exploratory research (McCracken, 1988). As a result, ten interviews will be conducted in this research study for the exploratory qualitative phase.

3.4.1.2 Type of interview

Semi-structured interviews were chosen for this qualitative research. The semi-structured interviews consist of open and objective-related questions. This type of interview is supported in the B2B customer loyalty literature as it offers a rich insight from a customer's viewpoint (Ozuem et al., 2016). Additionally, semi-structured interviews also provide the flexibility so that new 'concepts and theories can emerge out of the data' (Bryman, 2012: 13), an important consideration for conducting exploratory research in this study.

3.4.1.3 Sampling method

A non-probability sampling method was applied. Non-probability sampling is based on some form of subjective assessment of the sample and is an appropriate sampling approach for research purposes (Remenyi et al., 1998). One particularly relevant non-probability sampling method is convenience sampling which is widely used in exploratory qualitative research, because of its suitability for collecting data (Easterby-Smith et al., 2013). Consequently, for this qualitative research study, a convenience sampling technique was used to recruit participants who are easily accessible and convenient to the researcher.

3.4.1.4 Sampling procedure

Data was gathered through semi-structured interviews with purchasing professionals within UK manufacturing companies using the interview guide noted in Appendix A. Firms were contacted through connections on LinkedIn and contacts from The Manufacturer (2020). These two sources provided potential participants, which were contacted by email or telephone and invited to take part in the study. Ten interviews were conducted between March and August 2020. The interviews were conducted face-to-face or remotely via Skype or telephone, lasting 30 minutes to 85 minutes following the procedure set out in Figure 3.3.

Participants were informed of the purpose and conduct of the research by an information sheet (A) and requested to sign a consent form for face-to-face interviews or provide email consent for remote interviews (B). It was made clear that the research was supported by sponsorship of a credible academic institution, Henley Business School (C), and the participants were assured that their comments will be anonymous when the findings are written up (D). The interview process continued until the point of data saturation was reached, established by the needless repetition of information (Ulaga, 2003).

Figure 3.3 Interview data collection procedure

Information sheet (A) Consent form or email consent (B) Academic sponsorship (C) Guaranteed anonymity (D)	**For each face-to-face or remote interview:** 30 - 85 minutes Re-enter the field to address questions

Source: Author

The first wave of COVID-19 in England began in March 2020. As a consequence of the resulting national lockdown that followed, the majority of the interviews were performed remotely. One face-to-face interview was carried out in a meeting room in the participants' place of work during office hours, with only the participant and the researcher being present. With the permission of the participants, all interviews were recorded and transcribed verbatim. When possible, the interviews were supplemented by additional documents supplied by participants (Ulaga, 2003). All data collected was stored securely on an individual hard drive specific to the DBA project and password protected for use in NVivo for data analysis.

3.4.1.5 Unit of analysis

The unit of analysis for this study is a collaborative manufacturer-supplier relationship. A sample of relationships from various manufacturing industries was explored.

3.4.1.6 Participants

To gain further insight, participants responsible for purchasing management of UK manufacturing firms were interviewed. Participants chosen represent influential decision-makers engaged in the selection and monitoring of the supplier relationship (Ulaga, 2003). As a result, middle-level and senior-level purchasing management involved in the manufacturing-supplier relationship were invited to participate in the study.

3.4.1.7 Sample characteristics

The interviews were conducted with UK manufacturing companies representing a cross-section of a variety of industries highlighted by the report of Make UK (2022) and discussed in *Chapter 2* (2.6.2) of the literature review. In addition, the size of participating companies ranged from small and medium sized manufacturers to multinationals to ensure the topic was looked at in a range of contexts.

3.4.1.8 Interview guide

An interview guide was developed to provide a structure for conducting the semi-structured interviews with participants. Initially based on the interview guide of Ulaga (2003), it was further reviewed by an academic referee who provided feedback on how they understood and would respond to the questions (Remenyi et al., 1988). The final interview guide was composed of four main parts:

1. How participants view the manufacturing industry;
2. How participants view their company;
3. How participants view relationships with suppliers, and
4. How participants felt when working with suppliers.

In the context of conducting the interviews, it is important to observe reflexivity (King, 2004). The final interview guide is shown in Appendix A. The sample interview transcript for the senior buyer participant 6 from the aerospace industry is also presented in Appendix B to provide further evidence that supports the author's approach and give confidence in the final outcomes.

3.4.1.9 Assessment of trustworthiness

By adopting the techniques of triangulation and informant feedback an assessment of the trustworthiness of the research findings can be made (Miles and Huberman, 1994). The study's methodology and findings were presented at a colloquium workshop at Henley Business School in May 2020. Resulting feedback was incorporated into the study.

3.4.2 Data analysis process for stage 1: qualitative study

To analyse the qualitative study data (stage 1), a thematic analysis by Braun and Clarke (2006) was performed, using coding to identify relationship themes. A thematic analysis is further evidenced in customer loyalty research (Ozuem et al., 2016). A six-step approach, as articulated by Braun and Clarke (2006) was applied to the selected data. Its practical application in NVivo consists of eight phases of conducting the qualitative analysis as highlighted in the training materials of QDATRAINING (2013a and 2013b). Table 3.2 shows the links between the stages and processes and their conduct in NVivo to the practical guidelines as set out by Braun and Clarke (2006). The six-step approach to conducting thematic analysis is displayed in the first column, while the second column displays their corresponding application in NVivo. The third column shows the strategic elements of coding. The researcher moves from initial participant led descriptive coding, to the secondary coding which is more interpretive in nature and as such is both participant and researcher led. Finally, this leads to the generation of the themes which is researcher only led. The fourth column shows the more iterative nature of the tasks as the coding, analysis and reporting proceeds towards conclusion.

Table 3.2 Stages and processes involved in the qualitative analysis – adapted from Braun and Clarke (2006)

Analytical Process (Braun and Clarke, 2006)	Braun and Clarke Practical Application in NVivo	Strategic Objective	Iterative Process Throughout Analysis
1. Familiarising yourself with the data:	Phase 1 - Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas. Import data into the NVivo data management tool	**Data Management** *(Open and hierarchal coding through NVivo)*	Assigning data to refined concepts to portray meaning
2. Generating initial codes:	Phase 2 – Open Coding - Coding interesting features of the data in a systematic fashion across the entire data set, collecting data relevant to each code		
3. Searching for themes:	Phase 3 – Categorisation of Codes - Collating codes into potential themes, gathering all data relevant to each potential theme		Refining and distilling more abstract concepts
4. Reviewing themes:	Phase 4 – Coding on - Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis	**Descriptive Accounts** *(Reordering, 'coding on' and annotating through NVivo)*	
5. Defining and naming themes:	Phase 5 – Data Reduction - On-going analysis to refine the specifics of each theme, and the overall story [storylines] the analysis tells, generating clear definitions and names for each theme		Assigning data to themes/concepts to portray meaning
6. Producing the report:	Phase 6 – Generating Analytical Memos - Phase 7 – Testing and - Validating and Phase 8 – Synthesizing Analytical Memos. The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis	**Explanatory Accounts** *(Extrapolating deeper meaning, drafting summary statements and analytical memos through NVivo)*	Assigning meaning Generating themes and concepts

Source: Braun and Clarke (2006) and QDATRAINING (2013a and 2013b).

The next section discusses the data collection and analysis process for the main quantitative phase.

3.5 Data collection and analysis process for stage 2: quantitative study

3.5.1 Overview

This section reviews the data collection and analysis strategy for the quantitative study (stage 2) to provide an understanding of the process for the second phase of data collection and analysis.

3.5.1.1 Sample size

As a rough guide the minimum sample size should be 10 times the maximum number of straight arrows pointing at a latent construct in the PLS path model (Hair et al., 2014a). As a result, for the proposed conceptual framework (*Chapter Four*) the minimum sample size is 110. However, reviewing the sample sizes of the most recent B2B studies of Ruiz-Martinez et al. (2019) of 219, Yuan et al. (2020) of 273, Khan et al. (2020) of 181, Kittur and Chatterjee (2021) of 125, Vlachos (2021) of 131 and Sharma (2022) of 127, the target response to the questionnaires for this study will be 250 participants. How this sample size was achieved is outlined next.

3.5.1.2 Survey questionnaire

A survey questionnaire has been chosen. The measurement instruments used are bedded in previous literature and supported from the exploratory qualitative research results. The instrument contains items which operationalise the key constructs and classification variables. Prior research on customer loyalty in the manufacturing domain has predominately used quantitative methods to test models in a B2B context.

3.5.1.3 Sampling method

A probability sampling method was utilised for this study. In obtaining a probability sample, use can be made of a form of random procedure for the selection of the individuals or organisations. This is done in order to remove the possibility of selection bias (Remenyi et al., 1998). For the quantitative research study, a simple random sampling technique was used for the selection of a subgroup of the population where the prospect of getting selected is equal for all the members of the population. This was achieved by numbering the individuals in the sampling frame, and then randomly selecting them by a computer procedure (Remenyi et al., 1998).

3.5.1.4 Sampling procedure

In order to have a more reliable study and a representative sample, the survey questionnaires were collected by telephone interviews. Support from previous B2B customer loyalty studies are denoted by ** in Tables 2.3 to 2.15 showing the source of the data collection for survey questionnaires was by interviews. Specifically, two studies used on-line surveys together with interviews administered directly with the purchasing manager at their offices (Fiol et al., 2009; Picón et al., 2014). Additionally, one research study collected data from questionnaires by personal interviews in the field (Athanasopoulou and Giovanis, 2015). Important to this study, questionnaires were collected solely by telephone interviews for a number of key B2B studies in the literature (Wangenheim, 2003; Kumar and Grisaffe, 2004; Chandrashekaran et al., 2007; Paulssen and Birk, 2007; Čater and Zabkar, 2009; Khan et al., 2012). The survey questionnaires via telephone for this research were conducted between December 2021 and March 2022, lasting 20 minutes.

The data collection process for the quantitative study (stage 2) was adapted from the research study of Wangenheim (2003) with interviewers conducting the survey via telephone. A consent letter was used as the principal communication containing background information on the purpose of the research study and an opt-out option. Survey response improvement is supported by sponsorship of a reputable academic institution, Henley Business School (Kanuk and Berenson, 1975; Yu and Cooper, 1983; Roth and BeVier, 1998). Full anonymity and confidentiality were also integrated into the data collection procedure. The consent letter is shown in Appendix C.

The order of the survey questions was reorganised to put the endogenous constructs of customer satisfaction, behavioural and attitudinal loyalty before the exogenous constructs of functional, social and emotional value. In addition, the order of individual questions related to the construct were randomised when prompted. A screening question was also used at the start of the survey to ensure that only purchasing decision makers in the manufacturing firm completed the survey for this quantitative research.

All data collected was stored securely on an individual hard drive specific to the DBA project and password protected for use in SPSS and PLS software for data analysis.

3.5.1.5 Unit of analysis

The unit of analysis for this study is a collaborative manufacturer-supplier relationship. This research explored relationships from various UK manufacturing industries.

3.5.1.6 Participants

For stage 2, survey questionnaires were pre-tested and administered by telephone interviews with purchasing managers and the persons responsible for purchasing operations of manufacturing firms in the UK to ensure generalisability of the research study. Participants were selected representing a cross-section of a wide variety of industries and a broad range of company sizes to ensure spread of opinion. Participants were representative of influential decision-makers in selecting and monitoring supplier relationships in the UK manufacturing industry. An externally sourced sample list of 2,203 UK manufacturing businesses was used where the participants were randomly selected.

3.5.1.7 Sample characteristics

The questionnaires were gathered through telephone interviews within UK manufacturing companies representing the main manufacturing sectors in the UK, identified in *Chapter Two* (2.6.2) of the literature review. In addition, the size of participating companies ranged from small and medium sized manufacturers to multinationals to ensure a spread of opinion.

3.5.1.8 Pre-test sample

The literature presents three key B2B loyalty research studies of Ulaga and Eggert (2006a), Čater and Čater (2009) and Fiol et al. (2009) that support a pre-test sample of the questionnaire in order to gain feedback on any survey ambiguities before formal deployment. Firstly, Ulaga and Eggert (2006a) pre-tested with four senior purchasing managers of manufacturing firms in the USA. Secondly, Čater and Čater (2009) ran a pre-test on their proposed questionnaire with ten purchasing managers in the manufacturing industry. Finally, Fiol et al. (2009) carried out a pre-test with five purchasing managers employed by Spanish manufacturing firms. Following these guidelines from the B2B literature in the manufacturing domain, the survey questionnaire for this research study was pre-tested with 12 participants. Following implementation of the pre-test survey sample, the only comments that were made by respondents were that question 15 for the indicator of direct product cost was slightly unclear. This feedback was despite the fact that the same question had been previously used in both Ulaga and Eggert's (2006a) and Čater and Čater's (2009) research questionnaire. As a result of this feedback, minor adjustments were made to the wording for this indicator in the measurement instrument, which now reads 'considering your main supplier's product price, when compared to the second supplier's price... please state on a 1-5 scale whether your main supplier's price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same'.

3.5.2 Data analysis process for stage 2: quantitative study

The data obtained from the quantitative study (stage 2) will be analysed by partial least squares (PLS) being an evolving approach to structural equation modelling (SEM). While a covariance-based approach (CB-SEM) is the more popular method, a review of published studies on the use of PLS-SEM by Hair et al. (2014b) highlighted that PLS-SEM has recently received considerable attention in the discipline of marketing (Hair et al., 2012; Ringle et al., 2012). Unlike a covariance-based approach which aims to confirm theories by determining how well a model can estimate a covariance matrix for the sample data, PLS-SEM operates much like a multiple regression analysis (Hair et al., 2011; Hair et al., 2014b). It is this characteristic which makes PLS-SEM particularly valuable for research purposes. Evidence of key B2B studies using PLS (Whittaker et al., 2007; Hutchinson et al., 2011; Williams et al., 2011; Poujol et al., 2013; Human and Naudé, 2014; Picón et al., 2014; Athanasopoulou and Giovanis, 2015; Matzler et al., 2015; Jeong and Oh, 2017; Ruiz-Martinez et al., 2019; Sharma, 2022), including manufacturing research (Ulaga and Eggert, 2006a, 2006b; Mustonen et al., 2016; Haghkham et al., 2020) provide further literature support for its application in this study.

Solid measurement theory is a necessary condition to obtain valuable results from PLS-SEM (Hair et al., 2014a). When developing constructs, two different types of measurement specification can be considered, *reflective and formative measurement* models. The *reflective measurement* model has a long-established tradition in the social sciences and is founded on established test theory. According to this theory, measures portray the effects of a principal construct (Hair et al., 2014a). Reflective indicators (measures) are believed to 'reflect the unobserved, underlying construct, with the construct giving rise to (or 'causing') the observed measures' (Hulland, 1999: 201). Reflective indicators therefore represent a set of all feasible items within the conceptual domain of a construct (Diamantopoulos and Winklhofer, 2001). As a result, 'reflective items are interchangeable, highly correlated and capable of being omitted without changing the meaning of the construct' (Hair et al., 2014b: 111).

In contrast, *formative measurement* models are based on the presumptions that the indicators cause the construct (Hair et al., 2014a). Therefore, formative indicators (measures) are understood to 'define (or 'cause') the construct' (Hulland, 1999: 201). A distinctive feature of formative indicators is that they are not interchangeable. Thus, each indicator for a formative construct represents a particular aspect of the construct's domain (Hair et al., 2014a). Therefore, leaving out a formative indicator will arguably alter the essence of the construct (Hair et al., 2014a). As a consequence, to ensure that the domain of content of the primary construct is sufficiently captured, breadth of coverage of the construct domain is important (Diamantopoulos and Winklhofer, 2001).

Fornell and Cha (1994) posit that the selection of indicator model depends on the level of theory supporting the model and the way in which the constructs have been conceptualised. Hulland (1999) argues that a thoughtful choice is required on whether to think of the underlying construct as being reflected in the measure (i.e., a reflective relationship) or whether the measures are defining the construct (i.e., a formative relationship).

The proposed conceptual framework for this research study incorporates the key constructs of functional, social and emotional relationship value as antecedents of customer satisfaction, behavioural and attitudinal loyalty. These constructs have been previously conceptualised in the literature through the use of reflective indicators (Čater and Čater, 2009; Fiol et al., 2009, 2011; Picón et al., 2014; Arslanagic-Kalajdzic and Zabkar, 2017), therefore, a *reflective measurement* model has been specified for this research.

By creating a path model that connects variables and constructs based on theory and logic (Hair et al., 2014a), the conceptual framework will be evaluated by following a multi-stage process defined by Hair et al. (2014b). The multi-stage model evaluation process for *reflective measurement* begins by reviewing the outer model and includes:

- Verification of construct reliability and Cronbach's alpha of the constructs;
- Verification of the convergent validity of the constructs;
- Testing the size and significance of all indicator outer loadings;
- Verification of the discriminant validity of the constructs.

Once the reliability and validity of the outer model has been established, several further steps are required to evaluate the hypothesised relationships within the inner model and include:

- Assessment of the model's predictive accuracy by measuring the coefficient of determination;
- Assessment of the predictive relevance of the model determined by the cross-validated redundancy;
- Determination of the estimates for the path coefficients, which represent the hypothesised relationships linking the constructs;
- Testing whether the relationships are significant.

The potential results and their significance will be determined by the analysis of the research data and the testing of the conceptual framework. The key outcome will be to confirm or deny support for the hypotheses in answering the principal research question and two sub-questions.

1. What factors drive customer loyalty in UK manufacturing companies?
    a. How do functional, social and emotional relationship value influence customer satisfaction and loyalty in a B2B manufacturing context?
    b. How does relationship age influence the satisfaction-loyalty link in a B2B manufacturing context?

3.6 Summary and conclusions

This chapter discusses the research design and methodological approach for the study. It details the theoretical aspects of the research design and postulates a critical realist perspective for this research. Important to this study, critical realism supports a mixed methods approach using both qualitative and quantitative methods, and proposes an integrative research process for theory testing to advance knowledge from a critical realist perspective (Miller and Tsang, 2010). A mixed methods approach will be adopted to gain a more in-depth understanding of the factors driving B2B customer loyalty in the UK manufacturing industry, while counteracting the weaknesses inherent to using each approach individually. Triangulation will allow for the identification of customer loyalty aspects more insightfully by approaching the phenomenon from several directions using different research methods and techniques. The data collection and analysis process for both the qualitative study (stage 1) and quantitative study (stage 2) are also articulated. The next chapter applies the outcomes from the qualitative study and the literature review findings from *Chapter Two* to generate a conceptual framework and hypotheses set.

4 Qualitative study results, conceptual framework and hypothesis development

4.1 Introduction and overview

The chapter aims to develop a conceptual framework and hypotheses set from the findings of the literature review and the results of an exploratory qualitative study in order to answer the research question and two sub-questions highlighted in *Chapter One*:

1. What factors drive customer loyalty in UK manufacturing companies?
    a. How do functional, social and emotional relationship value influence customer satisfaction and loyalty in a B2B manufacturing context?
    b. How does relationship age influence the satisfaction-loyalty link in a B2B manufacturing context?

In particular, this chapter applies the literature review *Chapter Two* and qualitative study outcomes (4.2) to develop a conceptual framework (4.3.1) and hypotheses set for this research (4.3.5). Further justification by theoretical and previous empirical support is provided for each hypothesised relationship within the framework.

The process of formulating a conceptual framework and converting it into a symbolic expression is called theory construction (Jaccard and Jacoby, 2010). The term theory has been defined in multiple ways, however, according to Jaccard and Jacoby (2010: 28) a theory is 'a set of statements about the relationship(s) between two or more concepts or constructs'. The purpose of theory 'is to increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena' (Rudner, 1966: 10). In the social science literature, the difference between theories and models is not always clear (Jaccard and Jacoby, 2010). However, some researchers deem the terms to be interchangeable (Dublin, 1976).

Based on these foundations, Dublin's (1978) six stage framework is proposed for the development of the conceptual framework and hypotheses set for this research. According to Dublin's (1978) multi-stage process (4.3), and further supported by Nichols (2009), the six steps include identifying the units (4.3.1), specifying the laws of interaction (4.3.2), determining the boundaries (4.3.3), defining the system states (4.3.4), generating the hypotheses (4.3.5) and finally, assigning empirical indicators for the constructs (4.4). Additionally, the research instrument will be justified and generated based on the literature and the results of the qualitative study (stage 1). A review of the psychometric properties of proposed research instrument (4.5) and psychometric status of the constructs (4.6) will also take place.

4.2 Exploratory qualitative study results

Based on a thematic analysis by Braun and Clarke (2006) outlined in *Chapter Three* (3.4) this section discusses the results from the qualitative interviews (stage 1). Table 4.1 provides a summary of the interviewed participants in terms of their participant number, background, number of years purchasing experience, industrial sector and the size of firm in which they are employed. In addition, the interview duration time is presented, highlighting the total interviewing time of 569 minutes or 9.5 hours.

Table 4.1 Summary of participant number, background, number of years purchasing experience, industrial sector, size of firm and interview duration time

Participant Number	Participant Background	No of Years Purchasing Experience	Industrial Sector	Size (No of Employees)	Interview Duration Time
1	Senior Buyer	2	Mechanical Equipment	Medium (51-500)	46 minutes
2	Sourcing Leader	17	Mechanical Equipment	Large (500+)	63 minutes
3	NPI Purchasing Leader	8	Electrical Motors	Large (500+)	75 minutes
4	Commodity Manager	21	Metals	Medium (51-500)	47 minutes
5	Managing Director	8	Plastics	Small (1-50)	85 minutes
6	Senior Buyer	9	Aerospace	Large (500+)	65 minutes
7	Managing Director	15	Paper	Small (1-50)	48 minutes
8	Director	7	Thermal Electrical Equipment	Small (1-50)	34 minutes
9	Senior Buyer	27	Aerospace	Large (500+)	36 minutes
10	Head of Global Category	18	Power Generation Equipment	Large (500+)	70 minutes

Source: Author.

The findings present seven core themes developed during the cycles of analysis. These included functional (4.2.1.1-4.2.1.5), social (4.2.1.6-4.2.1.8) and emotional value (4.2.1.9-4.2.1.14), buyer satisfaction (4.2.1.15), behavioural (4.2.1.16) and attitudinal loyalty (4.2.1.17), and duration of the relationship (4.2.1.18) as shown in Table 4.2. The final codebook is shown in Appendix D. Each theme will be presented and discussed.

Table 4.2 Summary of thematic analysis named themes T1 to T7

Thematic Analysis Named Themes	Units of Meaning Coded
T1 - Functional Value	235
T2 - Social Value	19
T3 - Emotional Value	330
T4 - Buyer Satisfaction	20
T5 - Behavioural Loyalty	37
T6 - Attitudinal Loyalty	13
T7 - Duration of the Relationship	30

Source: Author.

4.2.1.1 Functional value

Functional value consisting of product quality, delivery performance, cost and know how, resulted in 235 references across all participants. Table 4.3 highlights each of these variables in terms of their importance.

Table 4.3 Summary of thematic analysis named themes for functional value T1

Thematic Analysis Named Themes	Units of Meaning Coded
T1 - Functional Value	235
T1.1 - Product Quality	56
T1.2 - Delivery Performance	40
T1.3 - Cost	94
T1.4 - Know How	45

Source: Author.

Overall, functional value was more frequently discussed by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, functional value was considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals. This was particularly relevant in the aerospace industry where the senior buyer highlighted the importance of product quality, delivery performance, cost and know how as key components of functional value.

Senior buyer participant 9 underlined the prominence of supplier know how as a source of added value to the supply chain to drive down cost and improve product quality, stating that suppliers in the aerospace industry are encouraged "*to come with suggestions on design, where if we were to change a design slightly it could be more cost effective to make, it could be a better quality".*

Senior buyer participant 9 further explained their role to enhance supplier delivery performance *"I feel that I've achieved quite a lot in managing this supplier to improve their on-time delivery".*

Senior buyer participant 6 from the aerospace industry discussed that to reduce costs through supplier project management "*we were having to say for each component on each cost down project what we were expecting it to cost over the next five years*".

The research results are well supported in the B2B literature where functional value has been shown to consist of positive values or benefits and negative values or sacrifices (Berry et al., 2002). The importance of functional value in the manufacturing industry has been identified in prior research by Ulaga (2003) and Ulaga and Eggert (2006a). Each of the variables will be further discussed in order of their importance.

4.2.1.2 Product cost

All participants discussed the importance of direct product costs, that is, the actual price charged by the supplier for the product purchased, resulting in 94 references across all participants. Product cost was discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, product cost was considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals in terms of driving down prices with their suppliers. This was particularly relevant in the aerospace industry.

Senior buyer participant 6 from the aerospace industry mentioned that previously it would be acceptable to have a supplier road map to a low cost on a product, however *"now we're* *having to say no sorry, you can't do that, and effectively just finding a cheaper solution now and switching over where we can".*

Senior buyer participant 1 from the mechanical equipment sector stated that *"my main goal would be to drive down cost for the goods that we purchase. As long as I achieve reducing costs, I would feel that I've achieved most of my goals".*

Commodity manager participant 4 discussed product pricing with his incumbent supplier in the metals industry*, "these are the benchmark prices we've had from the other suppliers and we said if you can't get to the point where you can match the price from these other suppliers then we're going to have to award the business to that other supplier".*

The results of the research study are consistent with the business marketing literature. Cannon and Homburg (2001) discussed direct product costs as the principal sacrifice acknowledged by purchasing managers. The importance of product cost as a source of added value to the supply chain in the manufacturing industry has also been identified in the B2B literature by Ulaga and Eggert (2006a). Product costs remain important because they have a direct impact on the cost structure of the buyer's own manufacturing company. As a result of persistent price pressures suppliers are expected to agree to yearly price reductions through long-term contracts (Ulaga, 2003).

4.2.1.3 Product quality

All participants discussed the importance of the supplier's product quality as a source of added value to the supply chain, resulting in 56 references across all participants. Product quality was discussed more frequently by the managing director in the manufacturing industry than other participant backgrounds. These participants worked for small size companies (1-50 number of employees). However, the senior buyer in large size companies (500+ number of employees) also indicated the importance of superior product quality in the aerospace industry. Therefore, product quality was considered more important in both small and large manufacturing firms. This was particularly relevant in the paper and aerospace sectors.

Managing director participant 7 discussed that in the paper sector *"our mantra is quality, quality, quality"* from our supplier base.

Senior buyer participant 6 stated that *"we have to have extremely high quality"* in the aerospace industry.

Senior buyer participant 9 explained that *"quality is absolute key, always is in purchasing, but in aerospace, you know if you have a faulty part then the plane can fall out of the sky".*

The research results are supported by the B2B literature, which describes product quality as a source of added value to the supply chain in the manufacturing industry (Ulaga, 2003; Ulaga and Eggert, 2006a). Product quality remains important because of the extent to which the supplier's product meets the required specifications. Not meeting the product specifications can cause quality problems in the buyer's own manufacturing process.

4.2.1.4 Know how

Participants discussed the importance of supplier know how as a source of added value to the supply chain, resulting in 45 references across the participants. Know how was discussed more frequently by the commodity manager in the manufacturing industry than other participant backgrounds. However, know how was also frequently discussed by the NPI purchasing leader and the managing director. These participants worked for manufacturing companies of different sizes. Therefore, supplier know how was considered important in manufacturing companies of all sizes where purchasing management relied on supplier input to improve product design and drive innovation in the buyer's products. This was particularly relevant in the metals and electrical motors sectors.

Commodity manager participant 4 in the metals industry, stated that *"because they are very knowledgeable about the industry specifically and the parts that are required, they're very forthcoming with suggestions to us, as to how we can improve the design of our parts, how we can take some cost out by reducing weight of the parts and things like that".*

NPI purchasing leader participant 3 from the electrical motors sector stated that supplier know how *"gives the business confidence, we're not just talking to people where we think we've designed something that can be built. We know that this can be built by a supplier that's shown best in class and is also steering us in making it easier for our design".*

The research results are supported by the B2B literature, which describes supplier know how as a source of added value to the supply chain in the manufacturing industry (Ulaga, 2003; Ulaga and Eggert, 2006a). Supplier know how remains important because it provides manufacturers with industry knowledge which allows them to improve product design in terms of functionality and costs (Ulaga, 2003).

4.2.1.5 Delivery performance

All participants discussed the importance of the supplier's delivery of product on-time as a source of added value to the supply chain, resulting in 40 references across all participants. Delivery performance was discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, supplier delivery performance was considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals in terms of on-time delivery of products.

Senior buyer participant 1 talked about the supplier holding *"stock on-site that we're not liable for"* to offer flexible delivery performance in the mechanical equipment sector.

Senior buyer participant 9 discussed implementing a special project to improve supplier delivery performance as their single most important goal in the aerospace industry *"it's quite a relatively new project so the goal had been really to get parts on-time. This was our biggest goal and that has been quite challenging".*

Commodity manager participant 4 in the metals industry illustrated that he would stop doing business with suppliers if the delivery performance was not there *"sometimes we stop doing business with suppliers and things like that, for one reason and another maybe the quality isn't right, or the deliveries aren't there".*

The research results are in line with the business marketing literature, which describes delivery as a major factor in the evaluation of suppliers (Hutt and Speh, 2001). The importance of delivery performance as a source of added value to the supply chain in the manufacturing industry has also been identified in the literature by Ulaga and Eggert (2006a). Delivery performance remains important because not meeting supplier delivery schedules will result in major coordination issues for purchasing management. This will lead to delays in production in their own manufacturing companies and additional costs for premium delivery charges (Ulaga, 2003).

4.2.1.6 Social value

Social value consisting of reputation and image, resulted in 19 references across the participants. Table 4.4 highlights each of these variables in terms of their importance.

Table 4.4 Summary of thematic analysis named themes for social value T2

Thematic Analysis Named Themes	Units of Meaning Coded
T2 - Social Value	19
T2.1 - Reputation	10
T2.2 - Image	9

Source: Author.

Overall, social value was more frequently discussed by the managing director in the manufacturing industry than other participant backgrounds. These participants worked for small size companies (1-50 number of employees). Therefore, social value was considered more important in smaller firms than larger firms. This was particularly relevant in the paper sector where the managing director highlighted the importance of reputation and image as key social value components.

Managing director participant 7 discussed supply chain issues from the paper industry relating to supplier reputation and image "*we buy mostly from Italy, but yes, we could go to China, and we could get it a lot cheaper, but we're not guaranteed the quality, and talking really broadly and crudely, it is because of their reputation and image*".

The research results are consistent with the literature in the B2B domain, where social value has been shown to play an important role in complex business relationships (Prior, 2013). Despite its importance, social value has been rarely analysed in the B2B domain (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). This research study will explore social value in more depth. Each of the variables of reputation and image will be further discussed in order of their importance below.

4.2.1.7 Reputation

Participants discussed the importance of the supplier's reputation as a source of added value to the supply chain, resulting in 10 references across the participants. Reputation was discussed more frequently by the managing director and the commodity manager in the manufacturing industry than other participant backgrounds. These participants worked for manufacturing companies of different sizes. Therefore, reputation was considered important in manufacturing companies of all sizes. The paper and metals manufacturing sectors were highlighted as relevant.

Managing director participant 7 from the paper industry mentioned that *"I hate to say, I'm trying to find a nicely politically correct phrase on Chinese goods. They tend to be of a good quality for your first couple of orders, you might get what you want, and then afterwards, it says it conforms when it doesn't".*

Commodity manager participant 4 discussed that in the metals industry by *"having a very good reputation with the company generally, not just with the procurement team, if a supplier has a good reputation with the engineering team, then that can really go a long way"* with the relationship.

The research results are consistent with the literature in the B2B domain, which describes reputation as a key factor of social value (Ganesan, 1994; Nguyen and LeBlanc, 2001; Fiol et al., 2009, 2011). Reputation remains important because of the extent it has on the decision-making process of supplier selection (Fiol et al., 2011). If the supplier with a poor reputation puts at risk not meeting the required product specifications, then this will cause quality problems in the buyer's own manufacturing process.

4.2.1.8 Image

Participants discussed the importance of the supplier's image as a source of added value to the supply chain, resulting in 9 references across the participants. Image was discussed more frequently by both the commodity manager and the managing director in the manufacturing industry than other participant backgrounds. These participants worked for both small size (1-50 number of employees) and medium size companies (51-500 number of employees). Therefore, image was considered more important in small and medium sized manufacturing firms than larger manufacturing firms. This was particularly relevant in the metals sector.

Commodity manager participant 4 illustrated the importance of image adding value to the supply chain in the metals industry *"I would definitely say it does"* particularly when comparing Chinese and Italian suppliers.

Senior buyer participant 6 from the aerospace sector also discussed that *"due to the industry I work in, we do have customers who say we are not allowed to use Chinese suppliers"* due to their poor image.

The results of the research study are supported by the business marketing literature, which describes image as a source of value (Nguyen and LeBlanc, 2001). Image remains important because purchasing management may be justified not to select certain suppliers due to their poor image as a result of their industry requirements of high product quality.

4.2.1.9 Emotional value

From the qualitative study emotional value was found to consist of interpersonal relationships, frustration and human touch, resulting in 330 references across all participants. Table 4.5 highlights each of these variables in terms of their importance.

Table 4.5 Summary of thematic analysis named themes for emotional value T3

Thematic Analysis Named Themes	Units of Meaning Coded
T3 - Emotional Value	330
T3.1 - Interpersonal Relationships	291
T3.1.1 - Collaboration	188
T3.1.2 - Communications	103
T3.2 - Frustration	27
T3.3 - Human Touch	12

Source: Author.

Overall, emotional value was more frequently discussed by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, emotional value was considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals. This was particularly relevant in the mechanical equipment industry where purchasing professionals within UK manufacturing companies offered interpersonal relationships, frustration and human touch as key dimensions of emotional value.

Senior buyer participant 1 talked about achieving their purchasing goals in the mechanical equipment industry through "*regular contact with suppliers and building a good relationship*".

Sourcing leader participant 2 from the mechanical equipment sector discussed their feelings of having to reprioritise supplier projects "*a lot of emotion and frustration as projects are pushed to one side*".

Senior buyer participant 1 further discussed about their relationship with one supplier *"I've built a relationship with quite a few people, and when they call me, they know that I'll have* *children. How's the boys or has the school holidays started? So yes, it is a good relationship".*

The research results are consistent with the literature which shows that emotions play a prominent role in understanding business purchasing behaviour (Lynch and De Chernatory, 2004; Hansen et al., 2008; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). However, few B2B research studies have focused on the emotional dimension of value (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017). As a result, emotional value will be explored in more depth by this research study. Each of the variables will be further discussed in order of their importance below.

4.2.1.10 Interpersonal relationships

All participants discussed the importance of interpersonal relationships with suppliers, resulting in 291 references across all participants. Interpersonal relationships were discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, interpersonal relationships with suppliers are considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals.

Senior buyer participant 9 discussed interpersonal relationships *"I mean you're describing it more as you would describe a normal relationship with a person aren't you".*

Managing director participant 7 from the paper industry stated that *"it's a relationship, like a marriage".*

The results of the research are consistent with the literature in which B2B interpersonal relationships are established between organisations, and individuals develop and maintain them (Ulaga, 2003; Ulaga and Eggert, 2005). Moreover, personal interaction is also evidenced as a key relationship dimension in the business and service domain (Anderson et al.,1993; Lapierre, 2000; Ulaga, 2003; Walter et al., 2003; Ulaga and Eggert, 2005, 2006a; Blocker, 2011 and Blocker et al., 2011). Personal relationships are also viewed as an important aspect of the purchasing process by buyers (Dwyer and Tanner, 1999). Without these personal interactions between buyer and supplier the relationship will not develop and add value to the supply chain.

4.2.1.11 Collaboration

All participants discussed the human aspects of relationship building as an important step to engaging with suppliers, resulting in 188 references across all participants. Collaboration was discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, collaboration with suppliers is considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals. This was particularly relevant in the mechanical equipment and metals sectors.

Senior buyer participant 1 from the mechanical equipment sector stated that *"the first year was really building the relationships and understanding the supplier and working together as more of a collaboration".*

Commodity manager participant 4 described collaboration in the metals industry *"when I think of that I always think of working together and building that relationship with a supplier".*

Senior buyer participant 9 from the aerospace industry discussed collaboration with a supplier *"as working with them, and for them to be able to come to us with suggestions perhaps on design, where if we were to change a design slightly it could be more cost effective to make, it could be better quality, and in turn I try to help".*

The results of the research study are consistent with the literature. Emberson and Storey (2006) present examples of collaborative buyer-supplier practice drawn from multi-sector case study research. Collaboration remains important to the buyer-supplier relationship because it adds value to the supply chain by building on the human aspects of the relationship. Identifying critical suppliers and engaging with them is key for future delivery forecasts.

4.2.1.12 Communications

All participants indicated communications was important to the relationship with the supplier, resulting in 103 references across all participants. Communications were discussed more frequently by the commodity manager and the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, communication with suppliers is considered more important in larger firms than smaller firms where the purchasing management had more defined objectives with suppliers.

Senior buyer participant 1 discussed supplier communication in the mechanical equipment industry as *"although they may not have been able to deliver on time, because of the situation with coronavirus, they have maintained open communication and that's really important for us".*

Senior buyer participant 6 in the aerospace industry stated that in measuring supplier performance *"if one supplier is harder to communication with then this is likely to be brought up and if it is expected that this would be important (for instance NPI development) then it would be used as a measure of supplier performance".*

Managing director participant 7 in the paper industry also illustrated the importance of communications with suppliers. *"For me, it's about having what I call adult conversations, it's about people who are happy to sit and talk".*

Despite communications being identified by this research as an important emotional component of supplier relationships, in particular interpersonal relationships, it has been rarely analysed in the B2B literature. Research by Ulaga and Eggert (2006a) identified communication forming part of personal interaction in the B2B manufacturing domain. Communication through email and remote meetings is important because of the growing trend of home working during the coronavirus pandemic.

4.2.1.13 Frustration

All participants discussed frustration as being an important emotional component of supplier relationships, resulting in 27 references across all participants. Frustration was discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, frustration was considered more important in larger firms than smaller firms where the purchasing management had more defined supplier goals. This was particularly relevant in the aerospace and mechanical equipment sectors.

Senior buyer participant 9 from the aerospace industry discussed that *"a lot of those frustrations have been there in the rollercoaster of getting to that end result".*

Senior buyer participant 1 talked about their relationship with the supplier in the mechanical equipment industry *"sometimes when you don't get the response that you want or you don't get the response that you've asked for within a certain timeframe, that's quite frustrating".*

NPI purchasing leader participant 3 from the electrical motors industry stated that *"you become very frustrated because you feel you have to repeat yourself various amounts of time".*

Despite frustration being identified as an important emotional component of supplier relationships, it has been rarely analysed in the B2B domain. There is a dearth of prior research that investigates the influence of emotional relationship value on customer loyalty.

This relationship will be explored by this research study incorporating frustration as one of the key elements of emotional relationship value.

4.2.1.14 Human touch

Participants discussed human touch as being an important emotional aspect in supplier relationships, resulting in 12 references across the participants. Human touch was discussed more frequently by the senior buyer in the manufacturing industry than other participant backgrounds. These participants worked for medium size companies (51-500 number of employees). Therefore, human touch was considered more important in larger firms than smaller firms where the purchasing management had more definitive objectives with their suppliers. This was particularly relevant in the mechanical equipment and metals sectors.

Senior buyer participant 1 talked about their relationship with one supplier in the mechanical equipment industry *"I've built a relationship with quite a few people, and when they call me, they know that I'll have children. How's the boys or has the school holidays started? So yes, it is a good relationship".*

Commodity manager, participant 4 from the metals industry stated that for their supplier *"they have a very friendly relationship, they like to get to know people, the first question they always ask is how are the family".*

Despite its importance in the research findings, human touch has been rarely analysed in the B2B domain as an emotional aspect of supplier relationships. There is little prior research that investigates the impact of emotional relationship value on customer loyalty in the B2B manufacturing domain. This relationship will be examined by this research study incorporating human touch as one of the key components of emotional relationship value.

4.2.1.15 Satisfaction

Participants discussed the importance of buyers feeling satisfied when dealing with suppliers, resulting in 20 references across the participants. Buyer satisfaction was discussed more frequently by the managing director in the manufacturing industry than other participant backgrounds. However, buyer satisfaction was also repeatedly discussed by the commodity manager, head of global category and senior buyer. These participants worked across manufacturing companies of different sizes. Therefore, buyer satisfaction was considered important in manufacturing companies of all sizes.

Senior buyer participant 6 discussed the importance of *"commercial people being highly satisfied with the supplier relationship"* in the aerospace industry.

Head of global category participant 10 from the power generation equipment industry stated *"I've been satisfied with the relationship with the supplier. I've been really pleased how that's evolved over the last four years".*

The research results are well supported in the B2B literature where buyer satisfaction is viewed as an affective evaluative response to a product or service experience (Eggert and Ulaga, 2002; Lam et al., 2004; Ulaga and Eggert, 2006b; Čater and Čater, 2009; Blocker et al., 2011). Buyer satisfaction remains important as it is believed to be a predictor of customers' intentions and behaviour (Bitner and Hubbert, 1994; Rust and Oliver, 1994; Lam et al., 2004; Čater and Čater, 2009).

4.2.1.16 Behavioural loyalty

Participants discussed the importance of behavioural loyalty when dealing with suppliers, resulting in 37 references across the participants. Behavioural loyalty was discussed more frequently by the commodity manager in the manufacturing industry than other participant backgrounds. However, behavioural loyalty was also consistently discussed by the senior buyer. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, behavioural loyalty was considered more important in larger firms than smaller firms. This was particularly relevant in the metals and aerospace sectors.

Commodity manager participant 4 discussed the relationship with one of his suppliers in the metals sector, *"we've worked with them, a brass forging supplier for, well since I was joined back in 2003, so that's a long-standing relationship that we have with them".*

Senior buyer participant 6 stated that *"so I was thinking loyalty could be seen as just placing purchase orders time and time again"* in the aerospace industry.

The research results are consistent with the B2B literature in which behavioural loyalty is viewed as a repeating purchasing behaviour while continuing a long-term relationship with the supplier (Rauyruen and Miller, 2007; Paparoidamis et al., 2019). Behavioural loyalty remains important because of the extent to which the buyer continues the supplier relationship and repurchases the product from them.

4.2.1.17 Attitudinal loyalty

Participants discussed the importance of attitudinal loyalty when dealing with suppliers, resulting in 13 references across the participants. Attitudinal loyalty was discussed more frequently by the senior buyer in the manufacturing industry than other particular participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, attitudinal loyalty was considered more important in larger firms than smaller firms. This was particularly relevant in the aerospace industry.

Senior buyer participant 9 in the aerospace sector stated *"I mean I would be loyal to suppliers in the respect of I have moved suppliers with me from job to job if I've known that they have given me a good price or on-time delivery or quality".*

Senior buyer participant 6, also mentioned that *"certain suppliers that have been loyal, have helped me and you know we've worked well together that I would recommend"* in the aerospace industry.

The research results are consistent with the B2B literature which views attitudinal loyalty as a psychological attachment leading to a recommendation (Human and Naudé, 2014; Paparoidamis et al., 2019). Attitudinal loyalty remains important because of the extent to which the buyer builds a close relationship with the supplier and is able to recommend them.

4.2.1.18 Duration of the relationship

Participants discussed the importance of the time it takes to build strong supplier relations, resulting in 30 references across the participants. Duration of the relationship was discussed more frequently by the commodity manager in the metals industry and the sourcing leader from the mechanical equipment sector than other participant backgrounds. These participants worked for both medium size (51-500 number of employees) and large size companies (500+ number of employees). Therefore, duration of the relationship was considered more important in larger firms than smaller firms where the goal of purchasing management was to build strong long-term supplier relationships. This was particularly relevant in the metals and mechanical equipment sectors.

Commodity manager participant 4 in the metals industry illustrated for one particular supplier that *"we have a long-standing relationship with them, and we were able to sit down with them and discuss the different ways in how we can achieve a lower cost".*

Senior buyer participant 1 discussed the importance of duration of the relationship in the mechanical equipment sector *"I think it's a massive factor, somebody that you start a relationship, there's no way that you could have the same relationship with somebody that you've been working with for the last 20 years".*

Senior buyer participant 9 from the aerospace sector stated *"in my opinion to have a long-term relationship with a supplier where they're going to work for your benefit as well, I think it's very important to have that relationship. It's much harder to say no to someone who has* *tried to help you in the past, who you've worked closely with and understands your business than it is for someone that hasn't built up that relationship".*

The results of the research are consistent with the literature, which describes duration of the relationship as the length of time to build strong supplier relations (Arslanagic-Kalajdzic and Zabkar, 2017). Duration of the relationship is important in industrial markets as relationships tend to be longer than those in consumer markets due to extended investment cycles of industrial products (Mustonen et al., 2016). In addition, there is further literature evidence that supports the belief that relationship age is positively related to the appraisal of a partner (Swann and Gill, 1997; Scheer et al., 2009).

4.2.1.19 Summary and conclusions from qualitative study

Ten interviews were conducted within UK manufacturing companies representing a cross-section of a variety of industries highlighted by the report of Make UK (2022) and discussed in *Chapter Two* (2.6.2) of the literature review. Middle-level and senior-level purchasing management involved in the manufacturing-supplier relationship participated in the study. Their average number of years of purchasing experience was 13.2 years. In addition, the size of participating companies ranged from small and medium sized manufacturers to multinationals to ensure the topic was looked at in a range of contexts.

A summary of the outcomes, supporting evidence and resulting actions from the qualitative study (stage 1) are shown in Table 4.6. The findings from the qualitative research highlight the importance of both social and emotional value in adding benefit to the supply chain in the manufacturing domain. In addition, duration of the relationship was also shown to be paramount in B2B buyer-supplier relationships. This research will explore social and emotional value, and relationship age in more depth.

Moreover, compared to the B2B literature which gave prominence to cost, product quality and delivery performance as key components of functional value, this research also found that supplier know how was an important source of added value to the supply chain. As a result, supplier know how will be added as an additional component of the functional value construct. Additionally, in comparison to the literature which defined three factors of emotional value including experience, personalised treatment and interpersonal relationships, this investigation could only confirm interpersonal relationships as central to emotional value. Instead, the qualitative research underlined two other factors of frustration and human touch as pivotal in the understanding of business purchasing relationships. Therefore, this research study will explore emotional value consisting of interpersonal relationships, frustration and human touch in more depth to fill a literature gap.

Based on the interview sample from the UK manufacturing industry, a number of key conclusions can also be drawn out of the qualitative research, which are important to this study. These are synthesised in Table 4.7 together with supporting evidence as follows:

- **Functional value:** evidence of more defined supplier goals in terms of driving down prices with suppliers and demanding high product quality from suppliers were observed, particularly with medium and large manufacturing firms, due to the effects of the COVID-19 pandemic;
- **Social value:** smaller size companies tended to value the reputation and image of their supplier's firms more than larger size companies due to the need to meet their industry requirements of high product quality;
- **Emotional value:** amplified by the COVID-19 pandemic, interpersonal relationships between buyers and suppliers were shown to be pivotal, particularly with medium and large manufacturing firms. This is key for determining future delivery forecasts from suppliers and how buyers work collaboratively with suppliers;
- **Duration of the relationship** was considered more important in larger firms than smaller firms where the goal of purchasing management was to build strong long-term supplier relationships.

Overall, the relationship value construct definitions for functional (2.9.7) and emotional value (2.9.9) highlighted in *Chapter Two* were further revised to reflect the supporting evidence from the qualitative research and detailed in Tables 4.6 and 4.7. Importantly, the qualitative study further confirmed that the definitions for social value (2.9.8), customer satisfaction (2.9.3), behavioural and attitudinal loyalty (2.4.2), and duration of the relationship (2.10.2) were all consistent with the current literature and therefore remain as stated in *Chapter Two*. Based on these outcomes the next section discusses the research process for generation of the conceptual framework.

Table 4.6 Summary of the findings and resulting actions from the qualitative study

Construct	Definition	Research Findings	Supporting Evidence	Actions
Functional Value	The utility derived from the perceived product quality, expected delivery performance of the product, perceived know how and the perceived product costs related to a supplier's offering as recognised by key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Functional value resulted in 235 references across the participants. In addition to cost, product quality and delivery performance, the qualitative research found that supplier know how was also an important source of added value to the supply chain.	Commodity manager participant 4 in the metals industry, stated that *"because they are very knowledgeable about the industry specifically and the parts that are required, they're very forthcoming with suggestions to us, as to how we can improve the design of our parts, how we can take some cost out by reducing weight of the parts and things like that".*	Supplier know how will be added as a component of the functional value construct.
Social Value	The utility derived from the positive impression and social approval of the supplier firm (Arslanagic-Kalajdzic and Zabkar, 2017).	Social value consisting of reputation and image resulted in 19 references across the participants showing that it was important in adding value to the supply chain.	Commodity manager participant 4 discussed that in the metals industry by *"having a very good reputation with the company generally, not just with the procurement team, if a supplier has a good reputation with the engineering team then that can really go a long way"* with the relationship. In addition, the commodity manager participant 4 also illustrated the importance of image adding value to the supply chain in the metals industry *"I would definitely say it does"* particularly when comparing Chinese and Italian suppliers.	This research study will explore social value in more depth and investigate its relationship on customer satisfaction and customer loyalty.
Emotional Value	The utility derived from the feelings and emotions that a product generated for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Emotional value consisting of interpersonal relationships, frustration and human touch resulting in 330 references across the participants was shown to be important. The literature defined three factors of emotional value, experience, personalised treatment and interpersonal relationships. However, only interpersonal relationships was identified in this research.	Senior buyer participant 9 discussed interpersonal relationships *"I mean you're describing it more as you would describe a normal relationship with a person aren't you".*	This research study will explore emotional value consisting of interpersonal relationships, frustration and human touch in more depth and investigate its relationship on customer satisfaction and customer loyalty.
Emotional Value	The utility derived from the feelings and emotions that a product generated for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Frustration was identified as key component of emotional value resulting in 27 references across the participants.	Senior buyer participant 1 talked about their relationship with the supplier in the mechanical equipment industry *"sometimes when you don't get the response that you want or you don't get the response that you've asked for within a certain timeframe, that's quite frustrating".*	Frustration will be added as a component of the emotional value construct. This research study will explore emotional value in more depth.
Emotional Value	The utility derived from the feelings and emotions that a product generated for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Human touch was identified as key component of emotional value resulting in 12 references across the participants.	Senior buyer participant 1 talked about their relationship with one supplier in the mechanical equipment industry *"I've built a relationship with quite a few people, and when they call me, they know that I'll have children. How's the boys or has the school holidays started? So yes, it is a good relationship".*	Human touch will be added as a component of the emotional value construct. This research study will explore emotional value in more depth.
Duration of the Relationship	The length of the buyer-seller relationship (Arslanagic-Kalajdzic and Zabkar, 2017).	Duration of the relationship was shown to be important in buyer-supplier relationships resulting in 30 references across the participants.	Senior buyer participant 1 discussed the importance of duration of the relationship in the mechanical equipment sector *"I think it's a massive factor, somebody that you start a relationship, there's no way that you could have the same relationship with somebody that you've been working with for the last 20 years".*	This research study will explore the effect of duration of the relationship on the satisfaction-loyalty link.

Source: Author.

Table 4.7 Summary of the findings and resulting actions from the qualitative study (2)

Construct	Definition	Research Findings	Supporting Evidence	Conclusion
Functional Value	The utility derived from the perceived product quality, expected delivery performance of the product, perceived know how and the perceived product costs related to a supplier's offering as recognised by key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Functional value resulted in 235 references across the participants. Overall, functional value was more frequently discussed by the senior buyer who worked in medium and large size manufacturing companies. Cost and product quality were considered the most important sources of added value to the supply chain.	Senior buyer participant 1 from the mechanical equipment sector stated that "*my main goal would be to drive down cost for the goods that we purchase. As long as I achieve reducing costs, I would feel that I've achieved most of my goals*". In addition, senior buyer participant 9 explained that "*quality is absolute key, always is in purchasing, but in aerospace, you know if you have a faulty part then the plane can fall out of the sky*".	As UK manufacturing firms battled with the effects of the COVID-19 pandemic the need for more defined supplier goals in terms of driving down prices with their suppliers and demanding high product quality from suppliers were evident, particularly with medium and large manufacturing firms.
Social Value	The utility derived from the positive impression and social approval of the supplier firm (Arslanagic-Kalajdzic and Zabkar, 2017).	Social value resulted in 19 references across the participants showing that it was important in adding value to the supply chain. Overall, social value was more frequently discussed by the managing director who worked for small size companies in the manufacturing industry.	Managing director participant 7 from the paper industry mentioned that "*I hate to say, I'm trying to find a nicely politically correct phrase on Chinese goods. They tend to be of a good quality for your first couple of orders, you might get what you want, and then afterwards, it says it conforms when it doesn't*".	In the UK manufacturing industry small size companies tended to value the reputation and image of their suppliers firms more than larger size companies due to the need to meet their industry requirements of high product quality.
Emotional Value	The utility derived from the feelings and emotions that a product generated for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).	Emotional value resulted in 330 references across the participants. Overall, emotional value was more frequently discussed by the senior buyer who worked in medium and large size manufacturing companies. Interpersonal relationships was considered the most important source of added value to the supply chain.	Senior buyer participant 9 discussed interpersonal relationships *"I mean you're describing it more as you would describe a normal relationship with a person aren't you"*.	Amplified by the COVID-19 pandemic, interpersonal relationships between buyers and suppliers were shown to be paramount, particularly with medium and large manufacturing firms. This is key for future delivery forecasts from suppliers and how buyers can work collaboratively with suppliers
Buyer Satisfaction	An affective evaluative response to a product or service experience (Čater and Čater, 2009).	Buyer satisfaction resulted in 20 references across the participants. These participants worked across manufacturing companies of different sizes.	Head of global category participant 10 from the power generation equipment industry stated "*I've been satisfied with the relationship with the supplier. I've been really pleased how that's evolved over the last four years*".	In the UK manufacturing industry buyer's satisfaction is considered important for all company sizes.
Behavioural Loyalty	'The customer's willingness to repurchase the product and to continue a relationship with the supplier' (Čater and Čater, 2009: 586).	Behavioural loyalty resulted in 37 references across the participants. Overall, behavioural loyalty was more frequently discussed by the commodity manager and the senior buyer who worked in medium and large size manufacturing companies.	Senior buyer participant 6 stated that "*so I was thinking loyalty could be seen as just placing purchase orders time and time again*" in the aerospace industry.	In the UK manufacturing industry behavioural loyalty is considered important for larger firms than smaller firms.
Attitudinal Loyalty	'The level of the customer's psychological attachments and attitudinal advocacy vis-à-vis the supplier' (Čater and Čater, 2009: 586).	Attitudinal loyalty resulted in 13 references across the participants. Overall, attitudinal loyalty was more frequently discussed by the senior buyer who worked in medium and large size manufacturing companies.	Senior buyer participant 6, also mentioned that "*certain suppliers that have been loyal, have helped me and you know we've worked well together that I would recommend*" in the aerospace industry.	In the UK manufacturing industry attitudinal loyalty is considered important for larger firms than smaller firms.
Duration of the Relationship	The length of the buyer-seller relationship (Arslanagic-Kalajdzic and Zabkar, 2017).	Duration of the relationship resulted in 30 references across the participants. Overall, relationship age was more frequently discussed by the commodity manager and sourcing leader who worked in medium and large size manufacturing companies.	Senior buyer participant 9 from the aerospace sector stated "*in my opinion to have a long-term relationship with a supplier where they're going to work for your benefit as well, I think it's very important to have that relationship. It's much harder to say no to someone who has tried to help you in the past, who you've worked closely with and understands your business than it is for someone that hasn't built up that relationship*".	In the UK manufacturing industry duration of the relationship was considered more important in larger firms than smaller firms where the goal of purchasing management was to build strong long-term supplier relationships.

Source: Author.

4.3 The research process for generation of conceptual framework

4.3.1 Step one: Units

In B2B manufacturing research customer satisfaction has been identified as the most significant variable of relationship quality and its important role as a mediating affective variable between relationship value and customer loyalty is also confirmed (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b). Furthermore, the literature review, *Chapter Two*, highlights that by focusing on functional, social and emotional relationship value the proposed research will provide a new theoretical perspective on B2B customer loyalty in the manufacturing industry. As a result, six key constructs are identified from the literature review, *Chapter Two*, and further supported by an exploratory research study will form the basis of the conceptual framework. The important constructs of behavioural customer loyalty (4.3.1.1), attitudinal customer loyalty (4.3.1.2), customer satisfaction (4.3.1.3), functional relationship value (4.3.1.4), social relationship value (4.3.1.5) and emotional relationship value (4.3.1.6) will be discussed in the next section.

4.3.1.1 Behavioural customer loyalty

Based on the B2B literature, behavioural loyalty is viewed as a repeating purchasing behaviour while continuing a long-term relationship with the supplier (Rauyruen and Miller, 2007; Paparoidamis et al., 2019). Consequently, within the scope of relationship marketing, Čater and Čater (2009: 586) define behavioural loyalty as ‘the customer’s willingness to repurchase the product and to continue a relationship with the supplier’.

4.3.1.2 Attitudinal customer loyalty

Conversely, attitudinal loyalty is viewed as psychological attachment leading to a recommendation (Human and Naudé, 2014; Paparoidamis et al., 2019). Therefore, based on the relationship marketing literature, Čater and Čater (2009: 586) define attitudinal loyalty as ‘the level of the customer’s psychological attachments and attitudinal advocacy vis-à-vis the supplier’.

4.3.1.3 Customer satisfaction

Customer satisfaction is conceptualised as an affective evaluative response to a product or service experience, being well supported in the B2B literature (e.g., Eggert and Ulaga, 2002; Lam et al., 2004; Ulaga and Eggert, 2006b; Čater and Čater, 2009; Blocker et al., 2011). As a result, customer satisfaction is defined as a positive affective state resulting from the appraisal of all aspects of a firm’s working relationship with another firm (Dwyer et al., 1987;

Anderson and Narus, 1990; Ganesan, 1994). This study focuses on cumulative satisfaction as it is believed to be a better predictor of customer's intentions and behaviour (Bitner and Hubbert, 1994; Rust and Oliver, 1994; Lam et al., 2004; Čater and Čater, 2009).

4.3.1.4 Functional relationship value

The functional dimension of relationship value consists of positive values or benefits including the quality of the product and services, and negative values or sacifices such as price and other-monetary sacifices (Berry et al., 2002). The components of product and service quality together with price are strongly endorsed in the B2B literature (Anderson et al.,1993; Lapierre, 2000; Ulaga, 2003; Walter et al., 2003; Ulaga and Eggert, 2005, 2006a; Blocker, 2011). In addition, the exploratory qualitative study also highlighted that supplier know how was an important source of added value to the supplier chain (Ulaga, 2003; Ulaga and Eggert, 2006a). Functional relationship value is therefore defined as the utility derived from the perceived product quality, expected delivery performance of the product, perceived know how and the perceived product costs related to a supplier's offering as recognised by key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017).

4.3.1.5 Social relationship value

Social value refers to the social perspective of the firm (Fiol et al., 2009). Its key components include social image and corporate reputation (Ganesan, 1994; Nguyen and LeBlanc, 2001; Fiol et al., 2009, 2011). As a consequence, social relationship value is defined as the utility derived from the positive impression and social approval of the supplier firm (Arslanagic-Kalajdzic and Zabkar, 2017).

4.3.1.6 Emotional relationship value

The emotional dimension of relationship value originates from the feelings and emotions that the product or service provokes in the buyer (Fiol et al., 2011). Consequently, emotional relationship value is defined as the utility derived from the feelings that a product generates for the key decision-makers in the buyer's organisation (Arslanagic-Kalajdzic and Zabkar, 2017). From the B2B literature, Fiol et al. (2009, 2011) highlighted three factors contributing to the emotional dimension of relationship value including experience (Brown et al., 1995; Sweeney and Soutar, 2001), personalised treatment (Barnes, 2003) and interpersonal relationships (Ulaga, 2003; Ulaga and Eggert, 2005, 2006a). However, the results from the qualitative interviews (stage 1) could only confirm interpersonal relationships as central to emotional value. Instead, the qualitative research underlined two other factors of frustration and human touch as pivotal in the understanding of business purchasing relationships.

Therefore, this research study will explore emotional value consisting of interpersonal relationships, frustration and human touch in more depth to fill a literature gap.

4.3.2 Step two: Laws of interaction

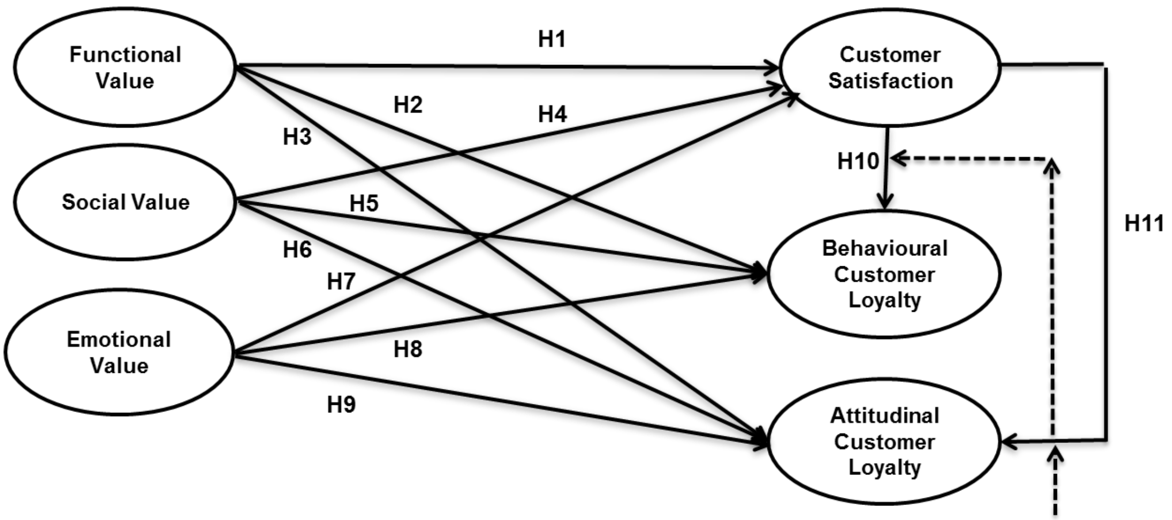
Dublin's (1978) second step in the process specifies the laws of interaction between key variables. Interaction is a type of action that transpires when two or more variables have an effect upon each other. 'According to Dublin (1978: 98) a 'categoric law of interaction (…) states that values of a unit are associated with values of another unit'. Together, these laws of interaction can be symbolised in an explanatory framework. 'Any generalised procedure or structure which purports to represent how phenomena are scientifically explained' (Hunt, 1991: 50).

According to Jaccard and Jacoby (2010) three different types of relationship may be represented in a conceptual framework including direct causal, indirect causal and moderated causal:

- A *direct causal* relationship is one in which a particular cause is expected to have a direct causal impact on an outcome variable;
- An *indirect causal* relationship is one in which a variable influences another variable indirectly through its impact on an intermediary variable, known as a mediator variable;
- A *moderated causal* relationship involves a minimum of three variables in which the causal relationship between two variables varies depending on the value of a third variable, known as a moderator variable;

The conceptual framework for this research study is presented in Figure 4.1. It incorporates the key variables of functional, social and emotional relationship value as antecedents of customer satisfaction, behavioural and attitudinal loyalty. Moreover, customer satisfaction acts as a mediating affective variable between relationship value and customer loyalty. In addition, a key moderator of the satisfaction-loyalty link, duration of the relationship, will also be incorporated. Each variable is denoted by an ellipse and a causal impact is represented by a straight arrow originating from the cause and pointing to the effect. Dashed lines indicate moderating effects. All causal relationships under investigation are labelled with a hypothesis reference. Each relationship will be subsequently justified by theoretical or previous empirical support from the literature.

Figure 4.1 Conceptual framework and hypothesised causal relationships H1 to H13



H12 – H13: Duration of the Relationship

Source: Author.

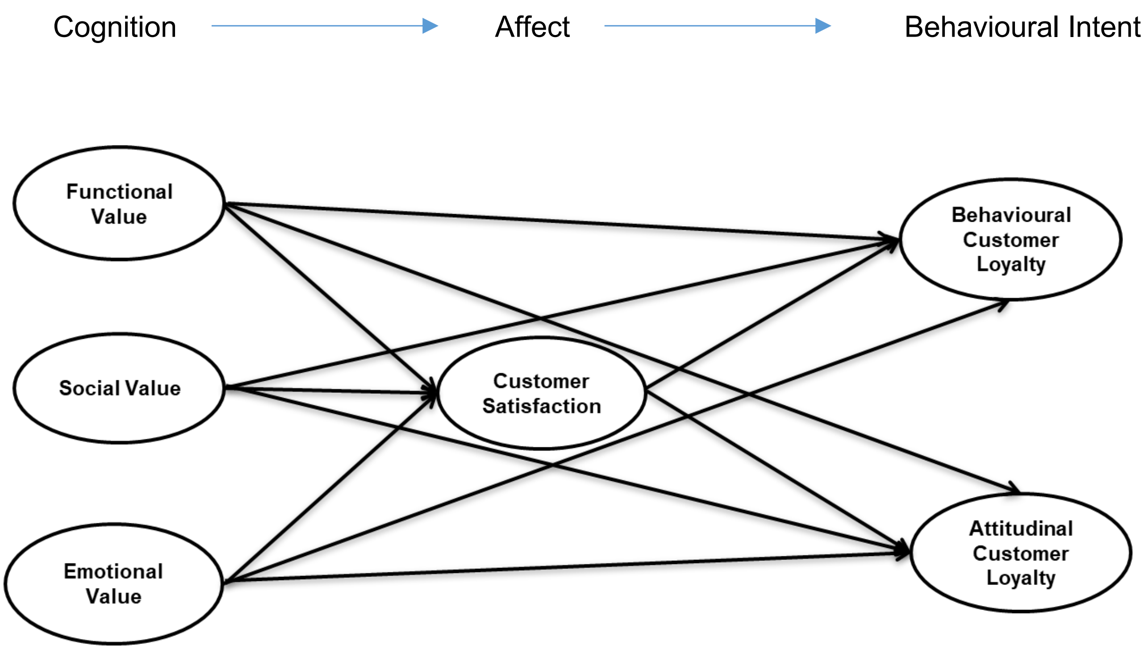
TRA provides a theoretical underpinning of the framework for this research study as discussed in *Chapter Two* (2.5). TRA as a theory is grounded in existing B2B manufacturing research studies (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b), where 'Fishbein's [TRA] framework provides theoretical guidance with respect to the interplay between cognition, affection and behavioural intentions' (Ulaga and Eggert, 2006b: 323).

Applying this theory to the research study's conceptual framework:

- Relationship value is a multidimensional cognitive-based construct consisting of functional, social and emotional components (2.9.6);
- Customer satisfaction is an affective relational outcome (2.9.3);
- Customer loyalty is a behavioural consequence of a B2B relationship (2.3).

Thus, anchored in TRA, cognitive perceptions of relationship value interact with affective feelings of satisfaction leading to behavioural intentions for maintaining a supplier-buyer relationship (Ulaga and Eggert, 2006b), as presented in Figure 4.2. According to TRA, cognitive attributes are mediated by affective ones resulting in behavioural outcomes (Eggert and Ulaga, 2002; Lam et al., 2004; Ulaga and Eggert, 2006b).

Figure 4.2 Theory of Reasoned Action applied to conceptual framework



Source: Fishbein and Ajzen (1975), Eggert and Ulaga (2002), Ulaga and Eggert (2006b).

However, the role of emotions requires further justification within the TRA framework. Recent research has highlighted that emotions have a considerable influence on the cognitive processes within humans (Tyng et al., 2017). According to Tyng et al. (2017) this is particularly apparent in modulating the selectivity of visual attention in addition to motivating both action and behaviour. Moreover, LeDoux and Brown (2017) also argue that emotions are cognitive states resulting from information gathering, providing further support that emotions form part of a cognitive process.

4.3.3 Step three: Boundaries

According to Dublin's (1978) third step, the theoretical boundaries of the conceptual framework are determined. These boundaries are described in the literature review, *Chapter Two*. Firstly, section (2.6) highlights the relevance of B2B loyalty in the UK manufacturing industry. Secondly, section (2.5) emphasises the importance of TRA to support a theoretical explanation of buyer behaviour. Finally, sections (2.2-2.4) underline the nature and properties of the B2B loyalty concept. Consequently, by applying TRA in the context of the B2B manufacturing industry, this research study aims to explain the antecedents of customer loyalty within this sector.

4.3.4 Step four: System states

The fourth step in Dublin's (1978) process defines the system states within which the key variables take on distinctive values that are both deterministic and continual over time (Nichols, 2009). In this context the important moderator variable of relationship age is identified from the literature that influences the satisfaction-loyalty link. Discussed in section (2.10), duration of the relationship is characterised as the length of the buyer-seller relationship (Grayson and Ambler, 1999; Homburg et al., 2003; Wangenheim, 2003; Chandrashekaren et al., 2007; Mustonen et al., 2016; Arslanagic-Kalajdzic and Zabkar, 2017).

4.3.5 Step five: Hypothesis generation

Dublin's (1978) fifth step in the process requires the generation of relevant hypotheses which form the conceptual framework for this research. The resulting hypotheses set is presented below:

1. H1-H3 specify relationships between functional relationship value and customer satisfaction, behavioural and attitudinal loyalty (4.3.5.1);
2. H4-H6 specify relationships between social relationship value and customer satisfaction, behavioural and attitudinal loyalty (4.3.5.2);
3. H7-H9 specify relationships between emotional relationship value and customer satisfaction, behavioural and attitudinal loyalty (4.3.5.3);
4. H10-H11 specify relationships between customer satisfaction and both behavioural and attitudinal loyalty (4.3.5.4);
5. H12-H13 specifies the moderator effect of duration of the relationship between customer satisfaction and both behavioural and attitudinal loyalty (4.3.5.5).

4.3.5.1 Hypotheses 1-3: Functional relationship value

Prior research suggests that performance and functionality are the main reasons for the choice of B2B services (Lilien et al., 2010). Functional benefits in B2B markets will be positively associated with customer satisfaction because increased functional performance will more likely enhance customer satisfaction (Candi and Kahn, 2016). This will result due to the specific type of exchanges between B2B firms, which are mainly contract and specification-orientated. If a supplier exceeds these specifications, they will surpass the customer's expectations, providing greater value, and be more satisfying to the customer (Candi and Kahn, 2016). Moreover, Lam et al., (2004) state that any additional perceived reduction in functional sacrifices (e.g., price) will further increase customer satisfaction. The service management literature also suggests that customer satisfaction is the consequence of a customer's perception of the value received from the relationship (Heskett et al., 1997). Building on examples from the travel industry in the USA, Heskett et al. (1997) highlights how companies can provide high-value services (quality services at a sensible price), resulting in satisfied customers.

From a theoretical perspective, relationship value is postulated as a 'cognitive-based construct which captures any benefit-sacrifice discrepancy' (Patterson and Spreng, 1997: 421), whereas customer satisfaction is primarily an affective evaluative response to a product or service experience (Oliver, 1993). The social science literature indicates that the cognitive thought processes initiate affective responses (Weiner, 1986), suggesting that functional relationship value assessments affect notions of satisfaction (Lam et al., 2004). Furthermore, from existing B2B research a positive relationship between functional relationship value and customer satisfaction has been identified (Patterson and Spreng, 1997; Eggert and Ulaga, 2002, Lam et al., 2004; Arslanagic-Kalajdzic and Zabkar, 2017). As this research study advances a multidimensional conceptualisation of relationship value, the examination of the functional component of relationship value is important as it will provide additional guidance on how to improve customer satisfaction through different combinations of relationship value in the manufacturing industry. In line with these findings the following hypothesis is proposed:

H1: Functional value will positively relate to customer satisfaction.

Originally developed to explain consumer purchasing behaviour, according to Sheth et al. (1991: 159), consumption value theory 'is applicable to choices involving a full range of product types (….) industrial goods, and services'. The theory suggests that B2C functional, social and emotional value affects consumer choice behaviour (Sweeney and Soutar, 2001). More recent studies have expanded this framework to business markets (Candi and Kahn, 2016; Arslanagic-Kalajdzic and Zabkar, 2017), arguing that from a theoretical viewpoint functional relationship value, one of three value dimensions, will impact on buyer behaviour in a B2B service context.

Other conceptual and empirical contributions to the value literature also suggest a direct influence of relationship value on customer loyalty (Eggert and Ulaga, 2002). Gross (1997) argues that in business markets, cognitive factors and not affective ones will mainly lead purchasing decision-making. As a result, the cognitive based construct of functional relationship value will therefore directly impact behavioural outcomes. Additionally, researchers have found a positive influence of functional relationship value on composite loyalty in a B2B setting (Kumar and Grisaffe, 2004; Mustonen et al., 2016). In the B2B domain the effect of functional relationship value on the various dimensions of loyalty has also been studied. Functional relationship values positive impact on behavioural loyalty has been supported in B2B research (Eggert and Ulaga, 2002; Lam et al., 2004; Čater and Čater, 2009). Moreover, the positive influence of functional relationship value on attitudinal loyalty has also been endorsed in the B2B literature (Eggert and Ulaga, 2002; Yuan et al., 2020). Despite previous research findings, the inclusion of functional value in the conceptual framework is important to this study as it will provide a new perspective on how to maximise customer loyalty through strategic combinations of relationship value in the manufacturing industry. In addition, the theory of consumption values provides support for a multidimensional concept of relationship value including a functional component (Arslanagic-Kalajdzic and Zabkar, 2017). Accordingly, in line with these findings the following hypotheses are proposed:

H2: Functional value will positively relate to behavioural loyalty.

H3: Functional value will positively relate to attitudinal loyalty.

4.3.5.2 Hypotheses 4-6: Social relationship value

Social relationship value has been shown to play an important role in complex business relationships (Prior, 2013). For example, a company's use of the latest SAP resource planning system depicts the company as being progressive in its management and planning (Francalanci, 2001). Further support that B2B customers benefit from social value is evidenced from the research in B2B brand communities by Bruhn et al. (2014). In addition, a study by Lemke et al. (2011) which examines differences in customer experience quality in B2B and B2C contexts, indicates that in the B2B domain customers are interested in whether a supplier delivers not just functional value, but also social value. From the literature social benefits have also shown to be positively related with customer satisfaction in a B2B context (Candi and Kahn, 2016). Benefits being defined as the fundamental need or want that customers satisfy when consuming a product or service (Kotler, 2003). Moreover, both Whittaker et al's (2007) and Arslanagic-Kalajdzic and Zabkar's (2017) studies report a positive relationship between social value and customer satisfaction in professional business services. In line with these findings the following hypothesis is proposed:

H4: Social value will positively relate to customer satisfaction.

Originally developed to explain consumer purchasing behaviour, according to Sheth et al. (1991: 159), consumption value theory ‘is applicable to choices involving a full range of product types (….) industrial goods, and services’. According to Sheth et al. (1991) products can be in possession of symbolic or prominent consumption value over and above their functional utility. From a theoretical perspective, consumption value theory expanded to business markets (Sheth et al., 1991; Candi and Kahn, 2016; Arslanagic-Kalajdzic and Zabkar, 2017) can be used to explain social values influence on buyer behaviour. Social value being one of three value dimensions identified affecting behaviour. However, despite social values importance in complex business relationships (Prior, 2013), it has been rarely analysed in the B2B domain (Fiol et al., 2011; Arslanagic-Kalajdzic and Zabkar, 2017).

The B2B services literature highlights that a customer’s product/service may be socially perceived in a positive way depending on the qualities of the specific service provider. Arslanagic-Kalajdzic and Zabkar (2017) state that if a particular advertising firm has a market reputation for good video production, a client’s products/services will be more highly valued if that advertising company is used to generating a new advertising initiative. In addition, B2B manufacturing companies may also have enhanced social value, if they choose to work with suppliers with good business references, as this will increase the credibility of the firm itself (Arslanagic-Kalajdzic and Zabkar, 2017).

In the assessment of social value, both image and reputation of the supplier can enhance the social perception of the customer firm (Arslanagic-Kalajdzic and Zabkar, 2017). From the literature, empirical evidence supports the view that both image and reputation impacts relationship outcomes such as customer loyalty (Andreassen and Lindestad, 1998; Pan et al., 2012). A B2B research study by Mustonen el al. (2016) using sample data from three industrial manufacturing companies found that green image had a positive influence on customer loyalty, being measured with elements of both behavioural and attitudinal loyalty. Moreover, drawing from the brand literature, in business and service markets a company’s name is frequently known as its brand name. Customers will perceive a trustworthy brand if it has a good reputation. The impression customers have about the reputation of a retailer will influence their purchase value from the retailer (Brown and Dacin, 1997). As a consequence, a supplier with a good reputation will decrease the potential risk associated with poor performance and give rise to advantageous purchase and repurchase intention from the customer (Pan et al., 2012). The research study by Pan et al. (2012) comparing the antecedents of customer loyalty in the B2B and B2C settings, reported a significant positive relationship between brand reputation and loyalty. Moreover, Khan et al. (2020) found that company reputation had a positive influence on customer loyalty. In line with these findings the following hypotheses are proposed

H5: Social value will positively relate to behavioural loyalty.

H6: Social value will positively relate to attitudinal loyalty.

4.3.5.3 Hypotheses 7-9: Emotional relationship value

Existing consumer research indicates that stimulating an emotional response contributes to performance (Norman, 2004). Although emotions have been rarely analysed in the B2B domain (Fiol et al., 2011; Tähtinen and Blois, 2011; Arslanagic-Kalajdzic and Zabkar, 2017), there has been research that compares the importance of emotions in B2B and B2C contexts. The studies of Yamamoto and Lambert (1994) and Candi and Saemundsson (2011) found that emotions exhibit similar patterns in both domains. Therefore, as a consequence any stimulation of emotional responses in a B2B context will also contribute to performance. Further research by Prior (2013) highlights the significance of emotional value in the B2B domain and 'suggests (.…) that the appraisal of value in complex industrial solutions is not always a rational process' (Prior, 2013: 1199). Similarly, Boksberger and Melsen (2011) argue that emotions play an important part in a customer's evalulation of relationship value.

The literature also offers evidence that emotions play a prominent role in understanding business purchasing behaviour (Lynch and De Chernatory, 2004; Hansen et al., 2008; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016). Moreover, it has been evidenced that emotional benefits have a positive influence on customer satisfaction (Candi and Kahn, 2016). Benefits being defined as the fundamental need or want that customers satisfy when consuming a product or service (Kotler, 2003). In addition, personal interaction, one of the key elements of emotional value has been shown to influence customer satisfaction in the B2B manufacturing domain (Čater and Čater, 2009). In line with these findings the following hypothesis is proposed:

H7: Emotional value will positively relate to customer satisfaction.

Consumption value theory suggests that B2C functional, social and emotional value affects consumer choice behaviour (Sweeney and Soutar, 2001). According to Sheth et al. (1991: 159), consumption value theory 'is applicable to choices involving a full range of product types (….) industrial goods, and services'. More recent studies have expanded this framework to business markets (Candi and Kahn, 2016; Arslanagic-Kalajdzic and Zabkar, 2017). As a result, from a theoretical viewpoint emotional relationship value, one of three value dimensions, will have an impact on buyer behaviour in a B2B domain.

Further support for emotional value as a value dimension that influences behaviour resides within the B2B branding literature (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012). Leek and Christodoulides (2012: 108) state that 'brand value encompasses not only delivery of the functional qualities but also delivering emotional qualities which help the buyer in the decision making process'. In their B2B research study on the involvement and influence of emotions in problematic business relationships, Tähtinen and Blois (2011: 908) argue 'that both human decision-making and actions are embedded in emotions'.

From existing B2B research Arslanagic-Kalajdzic and Zabkar (2017) found a link between emotional value and customer loyalty, operationalising loyalty to include one item of repurchase intention in its measurement. In addition, personal interaction, one of key dimensions of emotional value has been shown to influence attitudinal loyalty in the B2B manufacturing industry (Čater and Čater, 2009). In line with these findings the following hypotheses are proposed:

H8: Emotional value will positively relate to behavioural loyalty.

H9: Emotional value will positively relate to attitudinal loyalty.

4.3.5.4 Hypotheses 10-11: Customer satisfaction

Social exchange theory (SET) posits that human relationships are established by the use of a subjective cost-benefit analysis and a comparison of alternatives (Homans, 1958; Thibaut and Kelley, 1959; Blau, 1964; Kelley and Thibaut, 1978). According to this theory, exit or continuation of exchange relationships depends upon future expectations regarding costs and benefits of the relationship, compared with the expected benefits of alternative relationships (Thibaut and Kelley, 1959). Expectations regarding these costs and benefits are predominantly influenced by previous experiences in the relationship (Wangenheim, 2003). Thibaut and Kelley (1959) argue that satisfaction judgements are recognised as cumulated prior experiences and that these satisfying experiences increase the desire to stay in the relationship. As a consequence, a positive relationship between customer satisfaction and customer loyalty is consistent with social exchange theory (Wangenheim, 2003).

In a meta-analysis of satisfaction research studies, Szymanski and Henald (2001) endorsed satisfaction as a direct antecedent of loyalty. Fornell (1992) also indicated that satisfaction directly impacts loyalty, although the linkage was dependent on the industrial context. From the literature a positive relationship between customer satisfaction and loyalty has been identified (Spiteri and Dion, 2004; Flint et al., 2011; Picón et al., 2014; Arslanagic-Kalajdzic and Zabkar, 2017; Ruiz-Martinez et al., 2019; Khan et al., 2020). In addition, other researchers have found a positive influence of satisfaction on composite loyalty in a B2B setting (Lapierre et al., 1999; Bolton et al., 2003; Wangenheim, 2003; Woo and Ennew, 2004; Chumpitaz and Papariodamis, 2004; Caceres and Papariodamis, 2007; Fiol et al., 2009; Williams et al., 2011; Khan et al., 2012; Huang et al., 2019).

In the B2B domain the effect of satisfaction on the different dimensions of loyalty has also been studied. Satisfaction's positive impact on behavioural loyalty has been extensively supported in B2B research (Patterson and Spreng, 1997; Eggert and Ulaga, 2002; Homburg et al., 2004; Lam et al., 2004; Abdul-Muhmin, 2005; Ulaga and Eggert, 2006b; Paulssen and Birk, 2007; Rauyruen and Miller, 2007; Whittaker et al., 2007; Čater and Čater, 2009; Blocker et al., 2011; Mutlu and Taş, 2012; Poujol et al., 2013; Matzler et al., 2015; Russo et al., 2016; Jeong and Oh, 2017; Almomani, 2019; Huang et al., 2019; Sharma, 2022). Moreover, the positive influence of satisfaction on attitudinal loyalty has also been advocated in the B2B literature (Eggert and Ulaga, 2002; Lam et al., 2004; Chandrashekaren et al., 2007; Rauyruen and Miller, 2007; Čater and Čater, 2009; Almomani, 2019; Sharma, 2022). Despite the considerable previous B2B research on the influence of customer satisfaction on the two loyalty dimensions, these relationships remain important to this study as they will provide a new perspective in the UK manufacturing industry. The B2B services study of Whittaker et al. (2007) focused on UK consulting firms only. Accordingly, in line with these findings the following hypotheses are proposed:

H10: Customer satisfaction will positively relate to behavioural loyalty.

H11: Customer satisfaction will positively relate to attitudinal loyalty.

4.3.5.5 Hypotheses 12-13: Duration of the relationship

A growing body of B2B literature suggests that the length of a supplier-buyer relationship influences the customer satisfaction-loyalty link (Homburg et al., 2003; Wangenheim, 2003; Chandrashekaren et al., 2007; Arslanagic-Kalajdzic and Zabkar, 2017). Duration of the relationship is considered to be important in industrial markets as relationships tend to be longer than those in consumer markets due to extended investment cycles of industrial products (Mustonen et al., 2016). In addition, relational exchanges have been shown to evolve over time (Dwyer et al., 1987). Moreover, research studies from both the channel and relationship marketing literatures highlight that interaction over a period of time aids relationship development (Anderson and Weitz, 1989; Anderson and Sullivan, 1993). With repeated transactions, buyers and sellers are more closely associated and the reinforcement from positive interactions contributes towards customer loyalty (Homburg et al., 2003; Scheer et al., 2009). Customers who receive favourable experiences over time are also less likely to leave the relationship (Anderson and Sullivan, 1993), as they get used to dealing with a particular supplier which can lead to a propensity to limit further supplier choice (Homburg et al., 2003).

Bolton (1988) also argues that for long term customer relationships, cumulative experiences with a supplier will carry more weight than for short term relationships. As a result, customer satisfaction is assumed to be a better predictor of loyalty for long term compared to short term customers (Wangenheim, 2003). Empirical support for duration of the relationship strengthening the link between customer satisfaction and attitudinal loyalty is further underlined in the B2B literature (Wangenheim, 2003; Chandrashekaren et al., 2007). Accordingly, building on these findings it is postulated that the link between customer satisfaction and loyalty is strengthened with relationship age:

H12: Duration of the relationship strengthens the link between customer satisfaction and behavioural loyalty.

H13: Duration of the relationship strengthens the link between customer satisfaction and attitudinal loyalty.

A summary of the hypotheses set is shown in Table 4.8.

Table 4.8 Summary of hypotheses set H1 to H13

No.	Principal Hypotheses
1	Functional value will positively relate to customer satisfaction
2	Functional value will positively relate to behavioural loyalty
3	Functional value will positively relate to attitudinal loyalty
4	Social value will positively relate to customer satisfaction
5	Social value will positively relate to behavioural loyalty
6	Social value will positively relate to attitudinal loyalty
7	Emotional value will positively relate to customer satisfaction
8	Emotional value will positively relate to behavioural loyalty
9	Emotional value will positively relate to attitudinal loyalty
10	Customer satisfaction will positively relate to behavioural loyalty
11	Customer satisfaction will positively relate to attitudinal loyalty
12	Duration of the relationship strengthens the link between customer satisfaction and behavioural loyalty
13	Duration of the relationship strengthens the link between customer satisfaction and attitudinal loyalty

Source: Author.

The next section discusses the generation of the research instrument which is also informed by both the literature review *Chapter Two* and the outcomes of the qualitative research (4.2).

4.4 The research instrument

4.4.1 Overview

Dublin's (1978) sixth step in the process requires assigning empirical indicators for the constructs. As a result, based on the research approach, this section depicts the development of the research instrument. It discusses the key principles employed (4.4.2), major variables that form the instrument (4.4.3-4.4.7), and corresponding classification variables (4.4.8) used for data analysis.

4.4.2 The research instrument and key principles

The research instrument contains 50 items presented in Tables 4.9 and 4.10, reporting the hypotheses (H) number, indicator, survey statement and literature source for all constructs.

These operationalise six key constructs and six classification variables based on past research. The main literature sources are:

1. Ulaga and Eggert (2006a) – 22 items.
2. Čater and Čater (2009) – 7 items.
3. Fiol et al. (2009, 2011) – 7 items.
4. Others – 14 items.

In every circumstance, the researcher intends to represent discrete items and components (McMullan, 2005), highlight their relationships (Soderlund, 2006), and generate a reliable multi-item scale (Grisaffe, 2001; Wong and Sohal, 2002). In the development of the research instrument the following key principles will also be adopted:

- Operationalisation of the constructs were based on past research with some minor modifications as outlined in *Chapter Two* (2.8-2.9). The principal studies from the B2B literature include Ulaga and Eggert (2006a), Čater and Čater (2009) and Fiol et al. (2009, 2011);
- Previous scale items were taken from the manufacturing domain for the three key studies of Ulaga and Eggert (2006a), Čater and Čater (2009) and Fiol et al. (2009, 2011);
- One question with a different measurement scale is added just to help on the issue of common method bias (Podsakoff et al., 2003). A yes/no question of 'do you enjoy working in the UK manufacturing industry' is introduced.

Based on prior literature and the results of the qualitative study (stage 1), the selection of the research instrument and development of the measures for each of the major constructs will be discussed in the next section.

Table 4.9 Scale-items for the research instrument

Hypothesis	Construct	Indicator	Statement	Literature source
N/A	Hierarchical position		Which of the following categories best describes your position in your organisation?	Patterson and Spreng (1997)
N/A	Job role		What is your job role?	Patterson and Spreng (1997)
N/A	Firm size by employee numbers		What is the approximate number of full-time employees in your organisation in the UK?	Patterson and Spreng (1997)
N/A	Industry classification		In which one of the following manufacturing industries is your organisation principally engaged?	Grayson and Ambler (1999)
H12, H13	Customer relationship duration		What is the length of time the main supplier has been supplying to your company?	Grayson and Ambler (1999)
	Work duration		What is the length of time you have worked for your company?	Grayson and Ambler (1999)
	Manufacturing industry		Do you enjoy working in the UK manufacturing industry?	
H1, H2, H3	Functional Relationship Value	Direct Product Cost	Considering your main suppliers product price, when compared to the second suppliers price... Please state on a 1-5 scale whether your main suppliers price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same.	Ulaga and Eggert (2006a); Cater and Cater (2009)
		Product Quality	Compared to the second supplier, the main supplier provides us with better product quality	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, the main supplier meets our quality standards better	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, the main supplier's products are more reliable	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second, we reject less products from the main supplier	Ulaga and Eggert (2006a)
			Compared to the second supplier, the main supplier provides us with more consistent product quality over time	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, we have less variations in product quality with the main supplier	Ulaga and Eggert (2006a)
		Know How	Compared to the second supplier, the main supplier provides us with better access to its know how	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, the main supplier knows better how to improve our existing products	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, the main supplier performs better at presenting us with new products	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, the main supplier knows better how to help us drive innovation in our products	Ulaga and Eggert (2006a)
			Compared to the second supplier, the main supplier knows better how to assist us in new product development	Ulaga and Eggert (2006a)
		Delivery Performance	Compared to the second supplier, the main supplier performs better in meeting delivery due dates	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, we have less delivery errors with the main supplier	Ulaga and Eggert (2006a)
			Compared to the second supplier, deliveries from the main supplier are more accurate (no missing or wrong parts)	Ulaga and Eggert (2006a); Cater and Cater (2009)

Source: Author.

Table 4.10 Scale-items for the research instrument (2)

Hypothesis	Construct	Indicator	Statement	Literature source
H4, H5, H6	Social Relationship Value	Reputation	The general credibility of our main supplier helps to improve the image of our firm	Fiol et al. (2009, 2011)
			The general reputation of our main supplier fits with the image of our firm that we want to present	Fiol et al. (2009, 2011)
			The relationship with our main supplier improves the social perception of our firm	Fiol et al. (2009, 2011)
		Image	Our main supplier has a reputation for good social behaviour	Fiol et al. (2009, 2011)
			I consider that our main supplier behaves ethically towards its customers and employees	Fiol et al. (2009, 2011)
			Generally, I read and pay attention to all the information that our main supplier sends me	Fiol et al. (2009, 2011)
			Our supplying firm participates actively in social events	Fiol et al. (2009, 2011)
H7, H8, H9	Emotional Relationship Value	Interpersonal Relationships	Compared to the second supplier, it is easier to work with the main supplier	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, we have a better working relationship with the main supplier	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, there is better co-operation between the main supplier's staff and ours	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Compared to the second supplier, we interact better the main supplier	Ulaga and Eggert (2006a)
			Compared to the second supplier, we can address problems more easily with the main supplier	Ulaga and Eggert (2006a)
			Compared to the second supplier, we can discuss problems more freely with the main supplier	Ulaga and Eggert (2006a)
			Compared to the second supplier, the main supplier gives us a greater feeling of being treated as an important customer	Ulaga and Eggert (2006a)
		Frustration	I often get upset when I do not get what I expect from my main supplier	Susskind (2004)
			If I feel my main supplier does not care about me as a customer, this makes me angry	Susskind (2004)
			I rarely get upset when I receive bad service	Susskind (2004)
			When the product or service is not right in some way, it is not the mistakes that the main supplier makes that bother me, but how the supplier handles them with me	Susskind (2004)
		Human Touch (Social Interaction)	I like my main supplier to talk about private issues with me	Ruiz-Martinez et al. (2019)
			I like my main supplier to try and establish a more personal relationship with me	Ruiz-Martinez et al. (2019)
			My main supplier is interested in my personal situation	Ruiz-Martinez et al. (2019)
H10, H11	Customer Satisfaction	Customer Satisfaction	Overall, we are very satisfied with the relationship with this supplier	Lam et al. (2004); Cater and Cater (2009)
			Overall, this supplier is a good firm to do business with	Lam et al. (2004); Cater and Cater (2009)
			Overall, this supplier treats us fairly	Lam et al. (2004); Cater and Cater (2009)
	Behavioural Customer Loyalty	Behavioural Customer Loyalty	We consider this supplier as our first choice for this kind of product	Lam et al. (2004); Cater and Cater (2009)
			We are going to do more business with this supplier in the next few years	Lam et al. (2004); Cater and Cater (2009)
	Attitudinal Customer Loyalty	Attitudinal Customer Loyalty	I say positive things about this supplier to my colleagues in other firms	Lam et al. (2004); Cater and Cater (2009)
			I recommend this supplier to colleagues who seek my advice	Lam et al. (2004); Cater and Cater (2009)

Source: Author.

4.4.3 Functional relationship value

4.4.3.1 Direct product cost

The scale developed by Ulaga and Eggert (2006a) and subsequently used by Čater and Čater (2009) has been nominated because it measures direct product cost as part of functional relationship value in the manufacturing domain. The original one item scale employed a five-point Likert-type scale from the main supplier charges us a much lower price (1) to the main supplier charges us a much higher price (5). However, based on participants feedback on the survey pre-test the question was slightly amended to read ‘considering your main supplier’s product price, when compared to the second supplier’s price... please state on a 1-5 scale whether your main supplier’s price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same’, to measure the construct.

4.4.3.2 Product quality

The scale developed by Ulaga and Eggert (2006a) and subsequently partly used by Čater and Čater (2009) has been selected because it measures product quality in establishing functional relationship value in the manufacturing domain. The original six item scale employed a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7), so it will remain unchanged to measure the construct.

4.4.3.3 Know how

The scale developed by Ulaga and Eggert (2006a) and subsequently partly used by Čater and Čater (2009) has been selected because it measures know how in affirming functional relationship value in the manufacturing domain. The original five item scale employed a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7), so it will remain unchanged to measure the construct.

4.4.3.4 Delivery performance

The scale developed by Ulaga and Eggert (2006a) and subsequently partly used by Čater and Čater (2009) has been chosen because it measures delivery performance in substantiating functional relationship value in the manufacturing industry. The original three item scale employed a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7), so it will remain the same as the original to measure the construct.

4.4.4 Social relationship value

4.4.4.1 Reputation

The scale developed by Fiol et al. (2009, 2011) has been chosen because it measures reputation in substantiating social relationship value in the manufacturing domain. The original three item scale employed does not specify whether a five or seven-point Likert-type scale is used in the research. Therefore, in accordance with the other constructs being measured a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7) will be used for reputation.

4.4.4.2 Image

The scale developed by Fiol et al. (2009, 2011) has been selected because it measures image in establishing social relationship value in the manufacturing domain. The original four item scale employed does not specify whether a five or seven-point Likert-type scale is used, so in accordance with the other constructs being measured a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7) will be used for image.

4.4.5 Emotional relationship value

4.4.5.1 Personal interaction

The scale developed by Ulaga and Eggert (2006a) and subsequently partly used by Čater and Čater (2009) has been selected because it measures personal interaction in establishing emotional relationship value in the manufacturing domain. The original seven item scale employed a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7), so it will remain unchanged to measure the construct.

4.4.5.2 Frustration

The scale for frustration has been taken from the research by Susskind (2004) on consumer frustration in the customer-server exchange. In this case, consumer frustration is defined ‘as an emotional response to dissatisfying elements of a service experience’ (Susskind, 2004: 23). From a customer’s viewpoint, waiting for product delivery, not getting what has been requested or promised, receiving partially complete orders or information concerning the products and services offered, and experiencing a poor attitude from the service team are all characteristics leading to consumer frustration (Peterson, 2000). Applying this notion in the context of B2B buyer-supplier relationships, an adapted scale developed by Susskind (2004) has been chosen for frustration. The original four item scale employed a five-point Likert-type scale from highly agree to highly disagree, so to be consistent with the other measures this will be adapted to a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7). Item three of the scale is reverse coded.

4.4.5.3 Human Touch

From the B2B literature human touch is often referred to as social interaction (Murphy and Sashi, 2018; Ruiz-Martinez et al., 2019). Social interaction being defined as the style of communication geared to continuous exchange in time (Homburg et al., 2011). The scale used by Ruiz-Martinez et al. (2019) is preferred as it measures social interaction in a B2B context focusing on the manufacturing-retailer relationship. The original three item scale used by Ruiz-Martinez et al. (2019) employed a five-point Likert-type scale from strongly disagree (1) to strongly agree (5), so for consistency the scale has been expanded to a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7) to measure the construct.

4.4.6 Customer satisfaction

This scale includes three items relating to customer satisfaction used by Lam et al. (2004) and subsequently adapted to a manufacturing context by Čater and Čater (2009). The original three item scale used by Lam et al. (2004) employed a five-point Likert-type scale from strongly disagree (1) to strongly agree (5), so for consistency it has been expanded to a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7) for construct measurement of customer satisfaction.

4.4.7 Behavioural and attitudinal customer loyalty

A detailed review of the measurement of customer loyalty is highlighted in *Chapter Two* (2.8) of the literature review. This scale includes four items relating to customer loyalty used by Lam et al. (2004) and subsequently adapted to a manufacturing context by Čater and Čater (2009). The primary source of the loyalty scale is from Zeithaml et al. (1996). The scale of customer loyalty contains items relating to repurchase intention and recommendation. The original four item scale used by Lam et al. (2004) employed a five-point Likert-type scale from strongly disagree (1) to strongly agree (5), so for consistency the scale has been expanded to a seven-point Likert-type scale from strongly disagree (1) to strongly agree (7) to measure the constructs of behavioural and attitudinal customer loyalty.

4.4.8 Classification variables

Finally, the instrument also incorporates six classification variables whose design will be for data analysis. To determine both the hierarchical position and job role of respondents within their manufacturing company, and the firm size by employee numbers, the scales used by Patterson and Spreng (1997) and Nichols (2009) with minor modifications have been adopted. To determine industry categorisation, relationship age and work duration, the scales adopted by Grayson and Ambler (1999) and Nichols (2009) with minor modifications have been utilised. These scales have been chosen because they are the most appropriate in the area of customer loyalty research.

In conclusion, all survey statements for the six key constructs (4.4.3-4.4.7) and supporting classification variables (4.4.8) have been presented. The research instrument will be further reviewed by well-informed critical colleagues before use in the research. The final research instrument for this study is shown in Appendix F.

Discussion of the psychometric properties of the proposed research instrument and psychometric status of each of the constructs will take place in Sections 4.5 and 4.6, as confirmation that the proposed research instrument meets both validity and reliability requirements, based on prior research studies.

4.5 Psychometric properties of proposed research instrument

4.5.1 Overview

Research creates value only if it can establish a high level of both validity and reliability (Thietart, 2001). While validity affirms reliability, the reverse is not true (Nichols, 2009). The literature offers an approach for different researchers to measure the same object with the same instrument, arriving at the same conclusions (Church and Iacobucci, 2005). This approach articulates firstly, reliability (4.5.2), secondly, content validity (4.5.3) and thirdly, construct validity (4.5.4) including convergent, discriminant and nomological.

4.5.2 Reliability

Reliability is the extent to which measures are free from error and generate consistent results (Peter, 1979). As a result, ‘scale reliability is an index of consistency’ (Church and Iacobucci, 2005: 295). Traditionally, Cronbach’s alpha is used to assess scale reliability (Church and Iacobucci, 2005). Ideally, the Cronbach’s alpha coefficient of a scale should be above 0.70 (DeVellis, 2012). However, Cronbach’s alpha is sensitive to the number of items within the scale, and therefore has a tendency to understate internal consistency reliability (Hair et al., 2014a). Composite reliability proves a more suitable measure of internal consistency reliability (Hair et al., 2014a). Values above 0.70 are acceptable (Nunally and Bernstein, 1994).

4.5.3 Content validity

Content or face validity ‘focuses on the adequacy with which the domain of the characteristic is captured by the measure’ (Church and Iacobucci, 2005: 293). Items ‘should appear consistent with the theoretical domain’ (Bearden and Netemeyer, 1999: 4). However, this rule is difficult to exercise and is subjective (Carmines and Zeller, 1990). But despite this, it is justifiable to claim content validity in the situation where previously validated constructs are utilised and their prior instruments are not substantively adapted (Nichols, 2009), which applies in the predominance of cases in this research study. Where new constructs have been generated expert opinion should be employed. In conclusion, for both cases, ‘content validity principally rests upon an appeal to the propriety of content and the way it is presented’ (Nunnally, 1978: 94).

4.5.4 Construct validity

While reliability conveys a scale’s internal consistency and content validity its initial acceptability, construct validity determines whether it measures what it claims to measure (Churchill and Iacobucci, 2005). Confirmation follows through measurement of the construct’s convergent, discriminant and nomological validity.

Firstly, convergent validity represents the degree which a measure equates positively with alternative measures of the same construct (Hair et al., 2014a). Support will be provided for convergent validity if each indicator’s outer loadings are above 0.70 and if each construct’s average variance extracted (AVE) is 0.50 or higher (Hair et al., 2014b). AVE is defined as ‘the grand mean value of the squared loadings of the indicators associated with the construct’ (Hair et al., 2014a: 103). Secondly, discriminant validity characterises the level to which the construct is empirically separate from other constructs. It actually measures what it is expected to measure (Hair et al., 2014b). The method used to assess the presence of discriminant validity is the Fornell-Larcker criterion (Fornell and Larcker, 1981). To evaluate this, ‘the AVE of each construct should be higher than the highest squared correlation with any other construct’ (Hair et al., 2014b: 112). Finally, nomological validity is supported where appropriate theory and/or previous research indicates that a relationship exists between two constructs (Hair et al.,1998), and their particular measures relate positively.

4.6 Psychometric status of the constructs

Applying the preceding framework, Tables 4.11 to 4.13 summarise the previous psychometric status of the key constructs in this research. The primary findings are contributed by three studies, which confirm a high degree of both validity and reliability for the constructs presented. Firstly, Ulaga and Eggert (2006a) performed a confirmatory factor analysis (CFA) on indicators for five key measures: (1) direct product cost (one original item replicated without extension); (2) product quality (six original items replicated without extension); (3) know how (five original items replicated without extension; (4) delivery performance (three original items replicated without extension); and (5) interpersonal relationships (seven original items replicated without extension) and reported:

- High construct reliabilities with Cronbach's alpha from 0.96 to 0.97;
- Content validity established in a qualitative study by expert agreement;
- Convergent validity evidenced by each indicator's outer loadings being above 0.70 and each construct's AVEs ranging from 0.726 to 0.75, confirming that the average variance extracted is greater than 0.50 (Hair et al., 2014b);
- Discriminant validity confirmed by AVEs per construct being more than the squared correlation between each construct and any other construct (Fornell and Larcker, 1981).

A goodness-of-fit criterion is not available in PLS-SEM which has been used by Ulaga and Eggert (2006a) in their study. However, for the research studies of Čater and Čater (2009) and Fiol et al. (2009) it has been reported as part of their measurement model. As a result, a summary of the key fit indexes for the specification of structural equation models is shown in Appendix E to understand the CFA results from the Cater and Cater (2009) and Fiol et al. (2009) research studies.

Secondly, Čater and Čater (2009) performed a CFA on indicators for two key constructs: (1) customer satisfaction (three original items replicated without extension); (2) customer loyalty (four original items replicated without extension) and reported:

- Acceptable overall model fit χ^2 = 448.83; df =231; p < 0.001; χ^2/ df = 1.94; standardised RMR = 0.028; RMSEA = 0.023; GFI = 0.930; NFI = 0.989; CFI = 0.998;
- High construct reliabilities of greater than 0.6;
- Both convergent and discriminant validity are confirmed;
- Nomological validity has been demonstrated by Lam et al. (2004).

Thirdly, Fiol et al. (2009) conducted a CFA on total relationship social value including the indicators of the two key measures: (1) reputation (three original items replicated without extension); and (2) social image (four original items replicated without extension) and reported:

- Acceptable model fit for social value with chi-squared = 19.74; gl = 14; *P*-value = 0.1386; RMSEA = 0.064; GFI = 0.95; AGFI = 0.89;
- High construct reliabilities of 0.8103 and 0.8674; total composite reliability = 0.9017;
- Convergent validity evidenced by factor loadings of each scale item being greater than 0.5;
- Discriminant validity is confirmed.

Moreover, for the measures of the constructs developed separately outside of the three principal studies. Susskind (2004) conducted a CFA on consumer frustration (four original items adapted without extension) and reported:

- Acceptable model fit with standardised RMR = 0.03; AGFI = 0.91; NFI = 0.93;
- High construct reliabilities with Cronbach's alpha from 0.72 to 0.85, with frustration measuring 0.85;
- Both convergent and discriminant validity are confirmed.

Additionally, Ruiz-Martinez et al. (2019) carried out a CFA on social interaction (three original items replicated without extension) and reported:

- High construct reliabilities with Cronbach's alpha from 0.79 to 0.93, with social interaction measuring 0.83 and high composite reliability from 0.87 to 0.95, with social interaction recording 0.90;
- Both convergent and discriminant validity are confirmed.

Table 4.11 Psychometric status of key constructs

Construct	Functional Relationship Value			
Indicators	Direct Cost	Product Quality	Know How	Delivery Performance
Measure originally developed by	Ulaga and Eggert (2006a)	Ulaga and Eggert (2006a)	Ulaga and Eggert (2006a)	Ulaga and Eggert (2006a)
Methodology	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires
Survey Sample Size	1,950	1,950	1,950	1,950
Survey Response	400	400	400	400
Survey Response Rate	20.50%	20.50%	20.50%	20.50%
Target	Purchasing managers of U.S. manufacturing firms	Purchasing managers of U.S. manufacturing firms	Purchasing managers of U.S. manufacturing firms	Purchasing managers of U.S. manufacturing firms
Reliability	Confirmed	Confirmed	Confirmed	Confirmed
Content Validity	Confirmed	Confirmed	Confirmed	Confirmed
Convergent Validity	Confirmed	Confirmed	Confirmed	Confirmed
Discriminant Validity	Confirmed	Confirmed	Confirmed	Confirmed
Nomological Validity	Not reported	Not reported	Not reported	Not reported
Number of Items	1	6	5	3

Source: Author.

Table 4.12 Psychometric status of key constructs (2)

Construct	Social Relationship Value		Emotional Relationship Value		
Indicators	Reputation	Social Image	Interpersonal Relationships	Frustration	Human Touch
Measure originally developed by	Fiol et al. (2009)	Fiol et al. (2009)	Ulaga and Eggert (2006a)	Susskind (2004)	Ruiz-Martinez et al. (2019)
Methodology	Qualitative study with expert review for survey and quantitative survey questionnaires administered by interviews	Qualitative study with expert review for survey and quantitative survey questionnaires administered by interviews	Ten qualitative interviews. Qualitative study with expert review for survey and quantitative survey questionnaires	Quantitative survey questionnaires	Quantitative survey questionnaires with telephone follow-up
Survey Sample Size	245	245	1,950	230	2,250
Survey Response	101	101	400	230	219
Survey Response Rate	41.20%	41.20%	20.50%	100.00%	9.70%
Target	Purchasing managers of Spanish manufacturing firms	Purchasing managers of Spanish manufacturing firms	Purchasing managers of U.S. manufacturing firms	Shopping mall patrons	Purchasing managers of Spanish retailers
Reliability	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Content Validity	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Convergent Validity	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Discriminant Validity	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed
Nomological Validity	Not reported	Not reported	Not reported	Not reported	Not reported
Number of Items	3	4	7	4	3

Source: Author.

Table 4.13 Psychometric status of key constructs (3)

Construct	Customer Satisfaction	Customer Loyality	
Indicators	Customer Satisfaction	Behavioural Loyalty	Attitudinal Loyalty
Measure originally developed by	Čater and Čater (2009)	Čater and Čater (2009)	Čater and Čater (2009)
Methodology	Qualitative study with expert review for survey and quantitative survey questionnaires	Qualitative study with expert review for survey and quantitative survey questionnaires	Qualitative study with expert review for survey and quantitative survey questionnaires
Survey Sample Size	2,116	2,116	2,116
Survey Response	477	477	477
Survey Response Rate	22.50%	22.50%	22.50%
Target	Managers responsible for purchasing of manufacturing firms in a country in Central and Eastern Europe	Managers responsible for purchasing of manufacturing firms in a country in Central and Eastern Europe	Managers responsible for purchasing of manufacturing firms in a country in Central and Eastern Europe
Reliability	Confirmed	Confirmed	Confirmed
Content Validity	Confirmed	Confirmed	Confirmed
Convergent Validity	Confirmed	Confirmed	Confirmed
Discriminant Validity	Confirmed	Confirmed	Confirmed
Nomological Validity	Confirmed	Confirmed	Confirmed
Number of Items	3	2	2

Source: Author.

In conclusion, the psychometric properties of the proposed research instrument and psychometric status of each of the constructs have been articulated, as support for the proposed research instrument meeting both validity and reliability requirements, based on prior research studies. The final research instrument for this study is shown in Appendix F.

4.7 Summary and conclusions

This chapter incorporates relevant theory combined with a multi-stage research process in order to develop a conceptual framework and supporting hypotheses set for this research study. Six key constructs and one important moderator variable identified from the literature review, *Chapter Two*, and the results of an exploratory qualitative study, that are believed to influence the level of customer loyalty in the manufacturing industry are discussed in outline. A hypotheses set is subsequently developed, justified by theoretical or previous empirical support from the literature. Informed by both the literature review *Chapter Two* and the outcomes of the qualitative study a research instrument is also justified and developed.

Grounded in existing B2B manufacturing research studies (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b), by testing the proposed conceptual framework in the UK manufacturing industry, the research study aims to contribute towards the marketing discipline in three key areas:

- Firstly, the proposed conceptual framework notably extends the B2B research undertaken by Fiol et al. (2009) which investigates the impact of relationship value on customer satisfaction and loyalty in the Spanish tile manufacturing industry. This research study advances a multidimensional conceptualisation of relationship value and will explore the direct influence of functional, social and emotional relationship value on loyalty. Additionally, it also transfers the main elements of Arslanagic-Kalajdzic and Zabkar's (2017) framework from B2B services to B2B manufacturing and extends their research by exploring the impact of the functional, social and emotional relationship value on both behavioural and attitudinal loyalty (Arslanagic-Kalajdzic and Zabkar, 2017). The examination of all three components of relationship value is important as it will provide recommendations on how to maximise customer loyalty through strategic combinations of relationship value in the manufacturing industry and provide direction to practitioners on which dimension of value to focus their efforts;
- Secondly, the conceptual framework transfers additional components of Arslanagic-Kalajdzic and Zabkar's (2017) framework from B2B services to B2B manufacturing

and expands their research by investigating the influence of the social and emotional relationship value on customer satisfaction. Their exploration is essential as it will give guidance on how to improve customer satisfaction through different elements of relationship value and supports practitioners in the development and implementation of effective strategies for driving customer satisfaction in the manufacturing industry;

- Finally, it will provide additional insights to both academics and practitioners in the manufacturing industry on the effect of the important industrial moderator variable of duration of the relationship on the satisfaction, behavioural and attitudinal loyalty links. Duration of the relationship is considered to be important in industrial markets as relationships tend to be longer than those in consumer markets due to extended investment cycles of industrial products, contributing to stronger loyalty (Mustonen et al., 2016).

5 Quantitative study results and hypotheses testing

5.1 Introduction and overview

This chapter aims to detail the data preparation approach for application of structural equation modelling based on the data collection results of the quantitative study. This will proceed to the assessment of the conceptual framework *(Chapter Four)* with the structural equation modelling method PLS and draw conclusions regarding the research hypotheses. In particular, this chapter discusses two important issues which include the data collection results and data preparation (5.2) and assessment of the conceptual framework (5.3).

5.2 Data collection results, data preparation and descriptive information

5.2.1 Overview

Chapter Three (3.8) highlights that data for the quantitative study (stage 2) was collected from purchasing managers and the persons responsible for purchasing operations of UK manufacturing firms by conducting a telephone survey. The calls were conducted with an externally sourced sample list of 2,203 manufacturing businesses. 580 contacts refused participation in the study. 324 were coded as unreachable.17 contacts partially completed the interview. This resulted in 278 completed questionnaires for stage 2 of this study representing a 12.6 per cent response rate. This outcome compares favourably with prior B2B research of Wangenheim (2003) who recorded calls to 5,724 companies, leading to 425 completed questionnaires depicting a 7.4 per cent response rate. The survey data was converted into SPSS (.sav) format for appraisal. Hair et al’s (2014a) guidelines for data examination are proposed for preparation of the data for analysis. Hair et al’s (2014a) four steps for data evaluation include assessment of missing data (5.2.2), response patterns (5.2.3), outliers (5.2.4) and data distribution (5.2.5). In addition, demographic information (5.2.6) will also be presented.

5.2.2 Missing data

In social science research missing data when using quantitative methods can be an issue. Missing values are cases where participants have not completed the survey question. According to Hair et al. (2014a) when the quantity of missing data exceeds 15%, the observation should be removed from the data set. Following these guidelines 17 partially completed surveys were removed from the final data set leaving 251 usable survey questionnaires. These survey returns were participants who decided to stop the interview before completion of the questionnaire.

5.2.3 Response patterns

Response patterns such as straight lining need to be reviewed before analysing the data. Straight lining is where the respondent marks the same response for a large portion of the survey questions (Hair et al., 2014a). In this case the respondent needs to be removed from the data set. No evidence of straight lining was observed in the data collected for this research. Moreover, to address the possibility of inconsistent response patterns in survey answers, a screening question was added at the start of the survey to ensure that only purchasing decision makers in the manufacturing firm completed the survey. The data files were also reviewed for scores that were out of range (e.g., a score of 10 for a seven-point Likert-type scale) and clearly incorrect responses. No additional respondent questionnaires were excluded at this point.

5.2.4 Outliers

An outlier is an extreme response to a specific question (Hair et al., 2014a). They can be identified by using visual observation and SPSS Statistics software that can develop boxplots that enable outliers to be identified by respondent number (Mooi and Sarstedt, 2011). Once the respondents are determined as outliers, they can be removed from the data set. However, care needs to be taken not to just exclude items that are not consistent with the remaining cases yet are still valid, as their removal can limit generalisability (Hillenbrand, 2007).

For the survey data collected, each of the construct's indicator variables were reviewed using boxplots and descriptive statistics to assess extreme values. Importantly, in this evaluation a comparison was made between the original sample mean and 5% trimmed mean. To obtain the 5% trimmed mean value SPSS removes the top and bottom 5 per cent of cases and calculates a new mean value (Pallant, 2013). For this data set by comparing the original mean and the new trimmed mean the output shows that any extreme values have little influence on the original mean as the figures are similar. Given this, and the fact that the values are not too different from the remaining distribution, the outlier cases identified were retained. The SPSS output for the construct of social value and indicator of reputation, question 13(1) from the survey questionnaire is shown in Appendix G. This is indicative of the review process undertaken for each construct and its indicators using SPSS.

5.2.5 Data distribution

It is important to substantiate that the data is not too far from normal as highly non-normal data can be an issue. Kolmogorov-Smirnov test and Shapiro-Wilks test are recommended to test normality (Pallant, 2013). These tests compare the data to a normal distribution by using the same mean and standard deviation as the sample (Mooi and Sarstedt, 2011). Two further measures of distributions, skewness and kurtosis should also be examined (Pallant, 2013). *Skewness* refers to the degree to which a variable's distribution is symmetrical. If the distribution of survey answers for a variable extends toward the left or right tail of the distribution, then the distribution is depicted as skewed. *Kurtosis* is an indicator of whether the distribution is too peaked (Hair et al., 2014a). A general guideline is that values should lie between +1 and -1 to indicate normality. The extent to which the data set conforms to normality was assessed by performing both the Kolmogorov-Smirnov and Shapiro-Wilks tests, reviewing *Skewness* and *Kurtosis* data and visually inspecting histograms and normal probability plots. The SPSS output for the construct of social value and indicator of reputation, question 13(1) from the survey questionnaire is shown in Appendix G as representative of the evaluation process. The appraisal undertaken for each construct and its indicators using SPSS indicated that a large proportion of the data was negatively skewed. This is not considered problematic, as PLS-SEM is highlighted as a nonparametric statistical method (Hair et al., 2019), and does not require the data to be normally distributed (Chin, 1998). The next section discusses the demographic information.

5.2.6 Demographic information

The demographic profile of the 251 respondents is presented in Tables 5.1 to 5.3. The respondents are from manufacturing firms from a wide variety of industries. The major industries were 53 per cent for other manufacturing, 11 per cent for metals, 7 per cent for construction and 5 per cent for food and drink. Make UK (2022) identifies that the sectors of other manufacturing, and food and drink are particularly important to the UK economy as they greatly contribute to UK's GVA from manufacturing, *Chapter Two* (2.6.2). The metals sector also indicates the highest export growth, increasing by 5.2 per cent from 2010 to 2020 (Make UK, 2022), highlighting its relevance to this research study, *Chapter Two* (2.6.2).

Table 5.1 Demographic profile of respondents by UK manufacturing sector

Manufacturing Sector	Frequency	Percentage
Aerospace	3	1%
Agricultural	7	3%
Chemicals	7	3%
Construction	17	7%
Electrical equipment	3	1%
Electronics	5	2%
Food and drink	13	5%
Furiniture	2	1%
Glass	4	2%
Machinery	6	2%
Metals	27	11%
Paper and wood	4	2%
Pharmaceuticals	3	1%
Plastics	10	4%
Rubber	2	1%
Textiles and garments	3	1%
Transport	3	1%
Other manufacturing	132	53%
Total	**251**	**100%**

Source: Author.

Firms ranged from small businesses to large companies. The majority had less than 50 employees (74 per cent), followed by firms with 51-500 employees (20 per cent) and firms with over 500 employees (6 per cent). The average duration of the supplier-customer relationship was 19.3 years, with a standard deviation of 13.1 years. Respondents held senior positions in their firms (53 per cent). Overall, the respondents were responsible for purchasing management (69 per cent) or purchasing operations of manufacturing firms at a director level (31 per cent). They averaged 14.6 years of experience with their companies, with a standard deviation of 12.0 years.

Table 5.2 Demographic profile of respondents

Demographic	Item	Frequency	Percentage
Sample size		251	100%
Company size by number of employees	Small (1-50)	186	74%
	Medium (51-500)	51	20%
	Large (500+)	14	6%
Position in organisation	Director/CEO	78	31%
	Senior Management	56	22%
	Middle Management	70	28%
	Department Member	47	19%
Job role in organisation	Purchasing Management	173	69%
	Director	45	18%
	Managing Director	33	13%
Duration of the supplier-customer relationship	< 11 years	79	31%
	11-20 years	101	40%
	21-30 years	37	15%
	31-40 years	22	9%
	41-50 years	7	3%
	> 50 years	5	2%
Length of time worked for firm	< 11 years	115	46%
	11-20 years	74	29%
	21-30 years	35	14%
	31-40 years	18	7%
	41-50 years	7	3%
	> 50 years	2	1%

Source: Author.

Table 5.3 Average duration of the supplier-customer relationship and average length of time respondents worked for firm

Item	Number of Years	Standard Deviation in Years
Average duration of supplier-customer relationship	19.3	13.1
Average length of time respondents worked for firm	14.6	12.0

Source: Author.

Following discussion of the data preparation approach for application of structural equation modelling and presentation of the demographic information, the next section reviews the evaluation of the conceptual framework based on the data set of 251 usable survey responses.

5.3 Assessment of the conceptual framework

5.3.1 Overview

The survey data set will be analysed by PLS being an evolving approach to SEM. While CB-SEM is the more traditional method, a review of published studies on the use of PLS-SEM by Hair et al. (2014b) underlined that PLS-SEM has in recent years received considerable attention in the marketing discipline (Hair et al., 2012; Ringle et al., 2012). The PLS-SEM method can evaluate ‘complex models with many constructs, indicator variables and structural paths without imposing distributional assumptions on the data’ (Hair et al., 2019: 3). This makes the application of PLS advantageous for assessing the conceptual framework in this research. Evidence from the literature of key B2B manufacturing studies using PLS (Ulaga and Eggert, 2006a, 2006b; Mustonen et al., 2016; Haghkham et al., 2020) provides further support for its use in this study. The conceptual framework (*Chapter Four)* will be evaluated by following a multi-stage process defined by Hair et al. (2014b) and Athanasopoulou and Giovanis (2015) which involves consideration of the following:

- Sample size (5.3.2);
- Specification of the model (5.3.3);
- Stages of analysis for the outer and inner model (5.3.4);
- Assessment of the measurement model (5.3.5);
- Common method bias (5.3.6);
- Assessment of the structural model and hypothesis testing (5.3.7);
- Testing the research hypotheses (5.3.8);
- Additional testing of the conceptual framework (5.3.9).

5.3.2 Sample size

As a rough guide to determine the sample size for PLS models, the minimum sample size should be 10 times the maximum number of straight arrows pointing at a latent variable in the PLS path model (Hair et al., 2014a). As a result, for the proposed conceptual framework (*Chapter Four*) the minimum sample size is 110. The sample size of 251 is therefore considered to be adequate for PLS implementation.

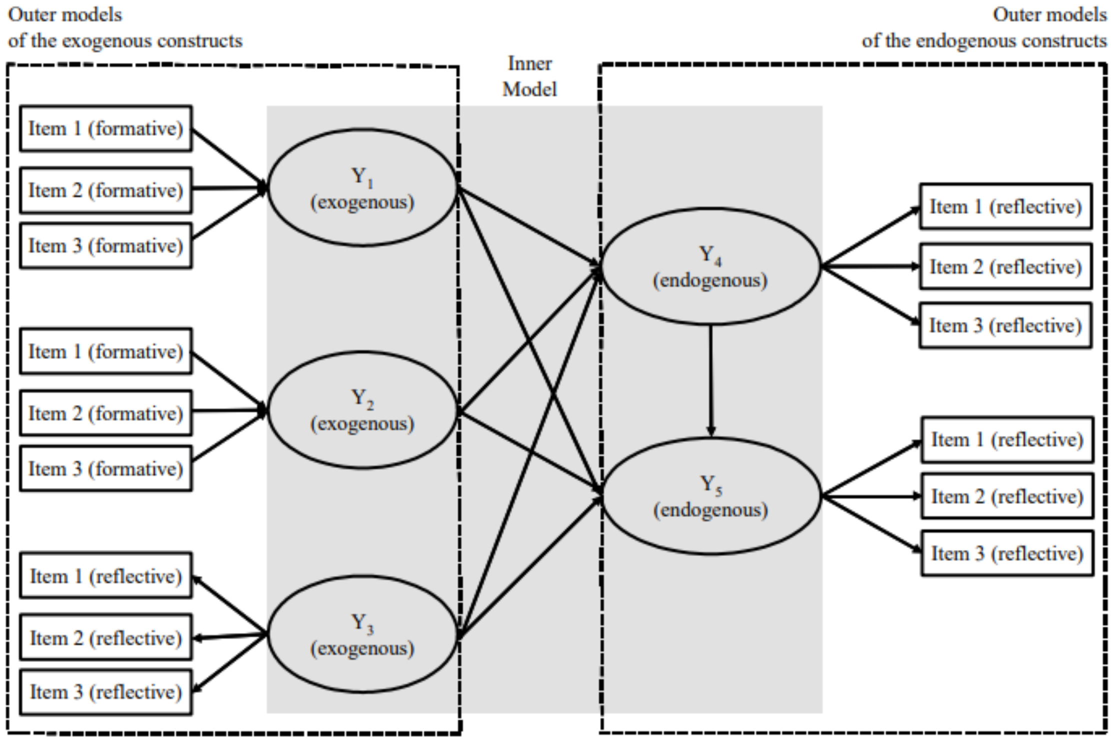
5.3.3 Specification of the model

The model specification stage addresses the set-up of the inner and outer models. The inner model, or *structural* model, expresses the relationships between the constructs under evaluation. The outer models, or *measurement* models, are adopted to examine the relationships between the indicator variables and their related construct. The first step in using 'PLS-SEM involves creating a path model that connects variables and constructs based on theory and logic' (Hair et al., 2014b: 110) as shown in Figure 5.1. Constructs are deemed to be either exogenous or endogenous. Whereas exogenous constructs act as independent variables, without any arrows pointing at them (Y_1, Y_2 and Y_3 in Figure 5.1), endogenous constructs are conveyed by the other constructs (Y_4 and Y_5 in Figure 5.1). They are often considered to be dependent variables in the relationship, but endogenous constructs can additionally act as independent variables when positioned in-between two constructs (Y_4 in Figure 5.1).

Once the inner model has been generated based on the conceptual framework (*Chapter Four*), then the outer model must be specified. This step requires the utilisation of either multi-item and single-item scales for each construct (Diamantopoulos et al., 2012) and the specification of the outer model in a reflective or formative manner (Diamantopoulos and Winklhofer, 2001). For this research each construct has been assigned a multi-item scale which is bedded in previous literature and discussed in *Chapter Four* (4.4). The relationship between constructs and measures, as reflective and formative indicators, was further discussed in *Chapter Three* (3.5.2). Every construct has been previously conceptualised in the literature through the use of reflective indicators (Čater and Čater, 2009; Fiol et al., 2009, 2011; Picón et al., 2014; Arslanagic-Kalajdzic and Zabkar, 2017), therefore, a *reflective measurement* model has been specified for this research. An overview of the hypothesis (H) number, indicator name and reference, statement and literature source for each construct are shown in Appendix H.

Immediately following the specification of the inner and outer models, the stages of analysis for the inner (*structural*) and outer (*measurement*) models are discussed next.

Figure 5.1 A simple path model



Source: Hair et al. (2014b: 110).

5.3.4 Stages of analysis for the outer and inner models

According to Hair et al. (2014b) the multi-stage model evaluation process for *reflective measurement* begins by reviewing the outer (*measurement*) model and includes:

- Verification of construct reliability and Cronbach's alpha of the constructs;
- Verification of the convergent validity of the constructs;
- Testing the size and significance of all indicator outer loadings;
- Verification of the discriminant validity of the constructs.

Once the reliability and validity of the outer model has been established, several further steps are required to evaluate the hypothesised relationships within the inner (*structural*) model and include:

- Assessment of the model's predictive accuracy by measuring the coefficient of determination (R^2);
- Assessment of the predictive relevance of the model determined by the cross-validated redundancy (Q^2);

- Determination of the estimates for the path coefficients, which represent the hypothesised relationships linking the constructs;
- Testing whether the relationships are significant.

The initial step of the model evaluation process is to assess the *measurement* model which will be outlined in the next section.

5.3.5 Assessment of the measurement model

The first stage of model evaluation is to verify the reliability and validity of the construct measures in the reflective outer model (Hair et al., 2014b). Reliability is the extent to which measures are free from error and generate consistent results (Peter, 1979). As a result, ‘scale reliability is an index of consistency’ (Church and Iacobucci, 2005: 295). Traditionally, Cronbach’s alpha is used to assess internal consistency reliability (Church and Iacobucci, 2005). Ideally, the Cronbach’s alpha coefficient should be above 0.70 (DeVellis, 2012). However, Cronbach’s alpha is sensitive to the number of items within the scale, and therefore has a tendency to understate internal consistency reliability ((Hair et al., 2014a). Composite reliability proves a more suitable measure of internal consistency reliability (Hair et al., 2014a). Values above 0.70 are acceptable (Nunally and Bernstein, 1994). From the results presented in Table 5.4, each construct’s reliability is confirmed as values for both composite reliability and Cronbach’s alpha are above the critical limit of 0.70.

While reliability conveys internal consistency, construct validity determines whether it measures what it claims to measure (Churchill and Iacobucci, 2005). Confirmation follows through measurement of the construct’s convergent and discriminant validity. Firstly, convergent validity represents the degree which a measure equates positively with alternative measures of the same construct (Hair et al., 2014a). Support will be provided for convergent validity if each indicator’s outer loadings are above 0.70 and if each construct’s average variance extracted (AVE) is 0.50 or higher (Hair et al., 2014b). AVE is defined as ‘the grand mean value of the squared loadings of the indicators associated with the construct’ (Hair et al., 2014a: 103). The outer loadings of all items, as shown in Table 5.4, exceed 0.70 and are significant to a level of 1 per cent (i.e., $\alpha = 0.01$). Moreover, each construct’s AVE is above 0.50 as presented in Table 5.4. Therefore, the results show acceptable convergent validity for the constructs of the measurement model. In addition, the values of composite reliability, Cronbach’s alpha and AVE are all consistent with those reported in the previous B2B customer loyalty studies of Athanasopoulou and Giovanis (2015) and Haghkhad et al. (2020) using PLS. The domain for Haghkhad et al’s (2020) research being the manufacturing industry which is relevant to this study.

Table 5.4 Properties of measurement model

Construct	Indicator	Indicator reference	Outer loadings	Composite reliability	Cronbach's alpha	AVE
Attitudinal Customer Loyalty	Attitudinal Customer Loyalty	atlo_1	0.872	0.890	0.756	0.802
		atlo_2	0.919			
Behavioural Customer Loyalty	Behavioural Customer Loyalty	belo_1	0.849	0.828	0.728	0.707
		belo_2	0.833			
Customer Satisfaction	Customer Satisfaction	cusa_1	0.927	0.949	0.920	0.862
		cusa_2	0.914			
		cusa_3	0.944			
Functional Relationship Value	Direct Product Cost	cost_1	0.803	0.938	0.933	0.604
	Delivery Performance	dely_1	0.762			
		dely_2	0.754			
		dely_3	0.785			
	Product Quality	qual_1	0.775			
		qual_2	0.793			
		qual_3	0.829			
		qual_4	0.730			
		qual_5	0.821			
		qual_6	0.805			
	Know How	know_1	0.765			
		know_2	0.791			
		know_3	0.746			
		know_4	0.753			
		know_5	0.730			
Social Relationship Value	Reputation	repu_1	0.880	0.914	0.904	0.749
		repu_2	0.924			
		repu_3	0.812			
	Image	imag_1	0.853			
		imag_2	0.898			
		imag_3	0.891			
		imag_4	0.794			
Emotional Relationship Value	Interpersonal Relationships	inte_1	0.739	0.913	0.902	0.616
		inte_2	0.822			
		inte_3	0.755			
		inte_4	0.824			
		inte_5	0.786			
		inte_6	0.781			
		inte_7	0.792			
	Frustration	frus_1	0.823			
		frus_2	0.782			
		frus_3	0.785			
		frus_4	0.783			
	Human Touch	humt_1	0.737			
		humt_2	0.823			
		humt_3	0.751			

Source: Author.

Secondly, discriminant validity characterises the level to which the construct is empirically separate from other constructs. It actually measures what it is expected to measure (Hair et al., 2014b). One method used to assess the presence of discriminant validity is the Fornell-Larcker criterion (Fornell and Larcker, 1981). To evaluate this, ‘the AVE of each construct should be higher than the highest squared correlation with any other construct’ (Hair et al., 2014b: 112). Table 5.5 highlights the square root of the AVE for each construct, depicted as diagonal elements (italics), and the association between these constructs. These results provide evidence of discriminant validity among constructs of the measurement model.

Table 5.5 Discriminant validity using Fornell-Larcker criterion

Construct	Atlo	Belo	Cusa	Emot	Func	Soci
Atlo	*0.896*					
Belo	0.541	*0.841*				
Cusa	0.697	0.646	*0.928*			
Emot	0.345	0.390	0.351	*0.785*		
Func	0.356	0.345	0.290	0.366	*0.777*	
Soci	0.414	0.299	0.331	0.262	0.252	*0.866*

Source: Author.

A further assessment method for discriminant validity is the Heterotrait-Monotrait (HTMT) ratio. Henseler et al. (2015) suggest the HTMT ratio should be below 0.9 or 0.85. The correlations are shown in Table 5.6, highlighting that all constructs are below 0.85, offering supporting evidence of discriminant validity.

Table 5.6 Discriminant validity using HTMT ratio of correlations

Construct	Atlo	Belo	Cusa	Emot	Func	Soci
Atlo						
Belo	0.806					
Cusa	0.826	0.838				
Emot	0.395	0.518	0.374			
Func	0.414	0.457	0.302	0.380		
Soci	0.482	0.401	0.349	0.282	0.262	

Source: Author.

Therefore, the results of both the Fornell-Larcker criterion and HTMT ratio demonstrate that all constructs have discriminant validity.

5.3.6 Common method bias

The possibility of common method bias (Podsakoff et al., 2003) is assessed with the Harman's single factor test (Brewer et al., 1970; Podsakoff & Organ, 1986). Common method bias (CMB) occurs when variations in survey responses are brought about by the research instrument rather than the actual viewpoint of the respondents that the instrument attempts to reveal. One additional question (Q12) with a different measurement scale was added to the instrument for this study solely to help on the issue of CMB. The Harman's single factor test revealed that more than one factor was shown to explain the variance, and the total variance for the single factor was less than 50 per cent. As a result, it can be induced that no general factor is in existence, providing evidence of no CMB present in this study.

5.3.7 Assessment of the structural model and hypothesis testing

Once the reliability and validity of the measurement model has been estimated, several additional steps are needed to evaluate the hypothesised relationships within the structural model (Hair et al., 2014b). The first stage of structural model evaluation is the assessment of the model's predictive accuracy by measuring the coefficient of determination (R^2). The R^2 represents the amount of variance of the endogenous construct explained by the exogenous constructs (Chin, 2010). This effect ranges from 0 to 1, with higher values representing a greater explanatory power (Hair et al., 2019). The guideline for R^2 are values of 0.19, 0.33 and 0.67, characterising weak, moderate, or substantial levels of predictive accuracy (Chin, 2010). For this model, the R^2 value for customer satisfaction is 0.202, behavioural loyalty is 0.464 and attitudinal loyalty is 0.542. However, the R^2 value should be interpreted in relation to the context of the study (Hair et al., 2014b). An R^2 value of 0.2 for customer behaviour is considered high (Hair et al., 2011). As a result, it can be concluded that each of the endogenous constructs assessed have R^2 values which are reasonable in this model.

For the next stage of assessment, the predictive relevance of the structural model is determined by the cross-validated redundancy Q^2 (Geisser, 1974; Stone, 1974). This measure is based on a sample re-use technique that follows a blindfolding procedure, which removes a part of the data matrix, then estimates the model parameters and predicts the removed part using the estimates (Sarstedt et al., 2014). 'The smaller the difference between predicted and original values the greater the Q^2 and thus the model's predictive accuracy' (Hair et al., 2014b: 113). The Q^2 value should be larger than zero for a particular endogenous construct to denote predictive accuracy of the structural model for that construct (Hair et al., 2014b). As a general guide, Q^2 values greater than 0, 0.25 and 0.5 portray small, medium and large predictive relevance of the PLS-path model (Hair et al., 2019). The Q^2 values of customer satisfaction, behavioural loyalty and attitudinal loyalty are 0.151, 0.304 and 0.428, respectively. Therefore, the results intimate to the predictive capability of this model based on the Q^2 values of the endogenous constructs.

The final stage of the evaluation of the structural model is to provide measurements for the path coefficients, which depict the hypothesised relationships linking the constructs (Hair et al., 2014b). Path coefficient values commonly fall into the range of -1 to +1, with coefficients nearer to +1 characterising strong positive relationships and coefficients nearer to -1 indicating strong negative relationships. To test whether the relationships are significant a bootstrapping option must be implemented (Helm et al., 2009). The key outcome will be to confirm support for the hypotheses in answering the principal research question and two sub-questions highlighted in *Chapter One*:

1. What factors drive customer loyalty in UK manufacturing companies?
    a. How do functional, social and emotional relationship value influence customer satisfaction and loyalty in a B2B manufacturing context?
    b. How does relationship age influence the satisfaction-loyalty link in a B2B manufacturing context?

5.3.8 Testing the research hypotheses

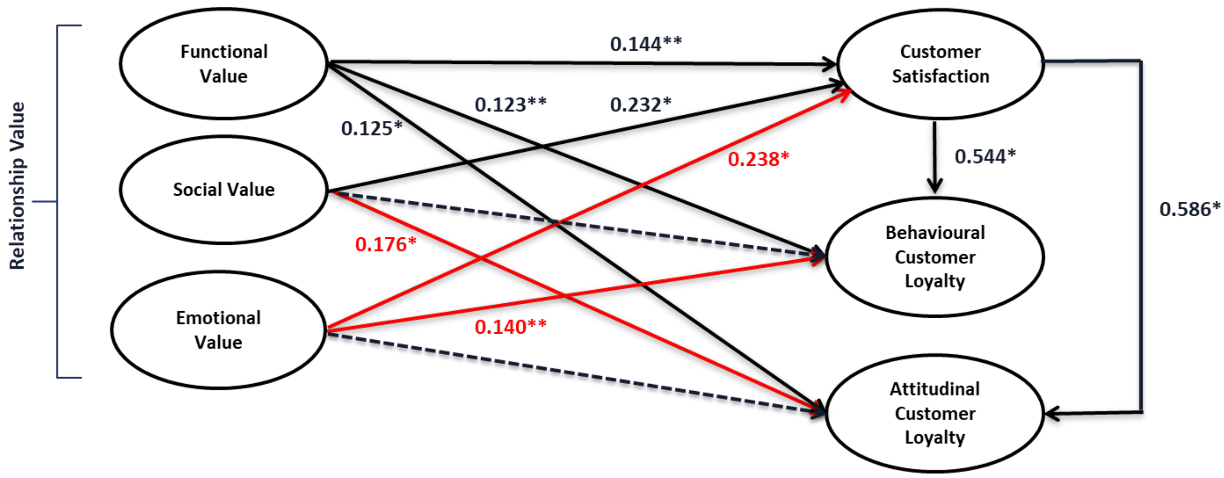
Following the evaluation of the structural model discussed in the previous section, a summary of the research hypotheses and results are shown in Table 5.7. Additionally, the conceptual framework advanced in *Chapter Four* (4.3.2) is presented in Figure 5.2, highlighting the supported hypothesised relationships and their path coefficients. All relationships featured in red have not been previously recognised in the B2B loyalty literature, offering a new perception of the linkages between relationship value as a multidimensional cognitive construct, customer satisfaction as an affective construct and customer loyalty as a multidimensional behavioural construct. The relationships highlighted in black have found prior support in the literature.

Table 5.7 Summary of research hypotheses and results

Hypothesis Number	Hypothesis	Support of Hypothesis
H1	Functional value will positively relate to customer satisfaction	Supported
H2	Functional value will positively relate to behavioural loyalty	Supported
H3	Functional value will positively relate to attitudinal loyalty	Supported
H4	Social value will positively relate to customer satisfaction	Supported
H5	Social value will positively relate to behavioural loyalty	Not supported
H6	Social value will positively relate to attitudinal loyalty	Supported
H7	Emotional value will positively relate to customer satisfaction	Supported
H8	Emotional value will positively relate to behavioural loyalty	Supported
H9	Emotional value will positively relate to attitudinal loyalty	Not supported
H10	Customer satisfaction will positively relate to behavioural loyalty	Supported
H11	Customer satisfaction will positively relate to attitudinal loyalty	Supported
H12	Duration of the relationship strengthens the link between customer satisfaction and behavioural loyalty	Not supported
H13	Duration of the relationship strengthens the link between customer satisfaction and attitudinal loyalty	Not supported

Source: Author.

Figure 5.2 Conceptual framework and supported hypothesised relationships



Source: Author. Note: Standardised coefficients are given for statistically significant paths only. * p < 0.01 and ** p < 0.05. Red denotes new relationships not previously confirmed in the literature. Black denotes relationships which have already been supported in the current literature.

Each hypothesis highlighted in *Chapter Four* (4.3.5) will be addressed separately. H1-H3 specify relationships between functional relationship value and customer satisfaction, behavioural and attitudinal loyalty which will be examined firstly, below.

Research Hypothesis 1: Functional value will positively relate to customer satisfaction.

The conceptual framework provides evidence to **support** hypothesis 1. In the model, functional value is found to have a statistically significant impact on customer satisfaction (path coefficient = 0.144, t = 2.411, $p < 0.05$).

Research Hypothesis 2: Functional value will positively relate to behavioural loyalty.

The conceptual framework provides evidence to **support** hypothesis 2. In the model, functional value is found to have a statistically significant impact on behavioural loyalty (path coefficient = 0.123, t = 1.973, $p < 0.05$).

Research Hypothesis 3: Functional value will positively relate to attitudinal loyalty.

The conceptual framework provides evidence to **support** hypothesis 3. In the model, functional value is found to have a statistically significant impact on attitudinal loyalty (path coefficient = 0.125, $t = 2.580$, $p < 0.01$).

Secondly, H4-H6 specified relationships between social relationship value and customer satisfaction, behavioural and attitudinal loyalty will be reviewed next.

Research Hypothesis 4: Social value will positively relate to customer satisfaction.

The conceptual framework provides evidence to **support** hypothesis 4. In the model, social value is found to have a statistically significant impact on customer satisfaction (path coefficient = 0.232, $t = 3.664$, $p < 0.01$).

Research Hypothesis 5: Social value will positively relate to behavioural loyalty.

The evidence provided by the conceptual framework does **not support** hypothesis 5. In the model, social value is found not to have a statistically significant impact on behavioural loyalty (path coefficient = 0.051, $t = 1.000$, $p > 0.05$).

Research Hypothesis 6: Social value will positively relate to attitudinal loyalty.

The conceptual framework provides evidence to **support** hypothesis 6. In the model, social value is found to have a statistically significant impact on attitudinal loyalty (path coefficient = 0.176, $t = 2.774$, $p < 0.01$).

Thirdly, H7-H9 specify relationships between emotional relationship value and customer satisfaction, behavioural and attitudinal loyalty which will be analysed next.

Research Hypothesis 7: Emotional value will positively relate to customer satisfaction.

The conceptual framework provides evidence to **support** hypothesis 7. In the model, emotional value is found to have a statistically significant impact on customer satisfaction (path coefficient = 0.238, $t = 3.137$, $p < 0.01$).

Research Hypothesis 8: Emotional value will positively relate to behavioural loyalty.

The conceptual framework provides evidence to **support** hypothesis 8. In the model, emotional value is found to have a statistically significant impact on behavioural loyalty (path coefficient = 0.140, $t = 2.393$, $p < 0.05$).

Research Hypothesis 9: Emotional value will positively relate to attitudinal loyalty.

The evidence provided by the conceptual framework does **not support** hypothesis 9. In the model, emotional value is found not to have a statistically significant impact on attitudinal loyalty (path coefficient = 0.047, $t = 0.857$, $p > 0.05$).

Fourthly, H10-H11 specified relationships between customer satisfaction and both behavioural and attitudinal loyalty will be considered below.

Research Hypothesis 10: Customer satisfaction will positively relate to behavioural loyalty.

The conceptual framework provides evidence to **support** hypothesis 10. In the model, customer satisfaction is found to have a statistically significant impact on behavioural loyalty (path coefficient = 0.544, $t = 8.922$, $p < 0.01$).

Research Hypothesis 11: Customer satisfaction will positively relate to attitudinal loyalty.

The conceptual framework provides evidence to **support** hypothesis 11. In the model, customer satisfaction is found to have a statistically significant impact on attitudinal loyalty (path coefficient = 0.586, $t = 8.361$, $p < 0.01$).

Finally, H12-H13 specifies the moderator effect of duration of the relationship between customer satisfaction and both behavioural and attitudinal loyalty which will be considered next.

Research Hypothesis 12: Duration of the relationship strengthens the link between customer satisfaction and behavioural loyalty.

The evidence provided by the conceptual framework does **not support** hypothesis 12. In the model, duration of the relationship is found not to have a statistically significant impact on the link between customer satisfaction and behavioural loyalty (path coefficient = -0.214, t = 1.274, p > 0.05).

Research Hypothesis 13: Duration of the relationship strengthens the link between customer satisfaction and attitudinal loyalty.

The evidence provided by the conceptual framework does **not support** hypothesis 13. In the model, duration of the relationship is found not to have a statistically significant impact on the link between customer satisfaction and attitudinal loyalty (path coefficient = -0.002, t = 0.491, p > 0.05).

Testing of the research hypotheses revealed nine out of 13 are supported. To review the mediating role of customer satisfaction and explore individual causal relationships, additional testing of the conceptual framework was conducted which will be discussed in the next section.

5.3.9 Additional testing of the conceptual framework

Further testing of the conceptual framework was performed to review specific causal relationships and the mediating role of customer satisfaction.

Specific causal relationships

In *Chapter Three,* Miller and Tsang (2010) suggest several well-established research methods that facilitate management theory testing from a critical realist perspective, with the third step being to test isolated causal relations. Therefore, additional testing of the model was conducted by testing binary or subsets of the causal relationships. This further testing followed the multi-stage process defined by Hair et al. (2014b) in the assessment of the conceptual framework (5.3) and examined the specific causal relationships before testing the complete conceptual framework.

Mediating role of customer satisfaction

The mediating role of customer satisfaction was examined using the Baron and Kenny (1986) test. Several of the proposed research hypotheses need to be supported to confirm mediation, as presented in Table 5.8. Additional testing to determine the mediating effect of customer satisfaction is discussed next.

Table 5.8 Summary of research results relating to the mediating role of customer satisfaction

Relationships	Direct effect	p	Indirect effect	p	Total effect	p	WAF
Func ⟶ Cusa ⟶ Belo	0.144	< 0.05	0.078	< 0.05	0.222	< 0.05	
H10: Cusa ⟶ Belo	0.544	< 0.01			0.544	< 0.01	
H2: Func ⟶ Belo	0.123	< 0.05			0.201	< 0.01	
Mediation strength							35%
Func ⟶ Cusa ⟶ Atlo	0.144	< 0.05	0.084	< 0.05	0.228	< 0.05	
H11: Cusa ⟶ Atlo	0.586	< 0.01			0.586	< 0.01	
H3: Func ⟶ Atlo	0.125	< 0.01			0.209	< 0.01	
Mediation strength							37%
Soci ⟶ Cusa ⟶ Atlo	0.232	< 0.01	0.136	< 0.01	0.368	< 0.01	
H11: Cusa ⟶ Atlo	0.586	< 0.01			0.586	< 0.01	
H6: Soci ⟶ Atlo	0.176	< 0.01			0.312	< 0.01	
Mediation strength							37%
Emot ⟶ Cusa ⟶ Belo	0.238	< 0.01	0.129	< 0.01	0.367	< 0.01	
H10: Cusa ⟶ Belo	0.544	< 0.01			0.544	< 0.01	
H8: Emot ⟶ Belo	0.140	< 0.05			0.269	< 0.01	
Mediation strength							35%

Source: Author.

Customer satisfaction partially mediates the relationship between functional value and behavioural loyalty.

In the first case, the results indicate the indirect effect of functional value on behavioural loyalty through customer satisfaction is significant. In addition, the results show that the direct effect of functional value on behavioural loyalty (hypothesis 2) and customer satisfaction on behavioural loyalty (hypothesis 10) are also significant. The strength of the mediation is highlighted by the indirect effect divided by the total effect and has a value of 0.078/0.222 = 0.35. As a result, 35 per cent of functional value’s effect of behavioural loyalty is demonstrated through the customer satisfaction mediator. Since the variance accounted for (VAF) is greater than 20 per cent, yet smaller than 80 per cent, this is an indication of **partial mediation** (Hair et al., 2014a).

Customer satisfaction partially mediates the relationship between functional value and attitudinal loyalty.

In the second case, the results highlight the indirect effect of functional value on attitudinal loyalty through customer satisfaction is significant. Additionally, the results show that the direct effect of functional value on attitudinal loyalty (hypothesis 3) and customer satisfaction on attitudinal loyalty (hypothesis 11) are also significant. The mediation strength is evidenced by the indirect effect divided by the total effect with a value of 0.084/0.228 = 0.37. This results in 37 per cent of functional value's effect of attitudinal loyalty being explained through the customer satisfaction mediator. Since the VAF is greater than 20 per cent, yet smaller than 80 per cent, this is an indication of **partial mediation** (Hair et al., 2014a).

Customer satisfaction partially mediates the relationship between social value and attitudinal loyalty.

In this case, the results propose that the indirect effect of social value on attitudinal loyalty through customer satisfaction is significant. In addition, the results show that the direct effect of social value on attitudinal loyalty (hypothesis 6) and customer satisfaction on attitudinal loyalty (hypothesis 11) are also significant. The strength of the mediation is highlighted by the indirect effect divided by the total effect and has a value of 0.136/0.368 = 0.37. Therefore, the customer satisfaction mediator accounts for 37 per cent of social value's effect of attitudinal loyalty. According to Hair et al. (2014a) the **mediation is partial** since the VAF is greater than 20 per cent, but smaller than 80 per cent.

Customer satisfaction partially mediates the relationship between emotional value and behavioural loyalty.

In the final case, the results indicate the indirect effect of emotional value on behavioural loyalty through customer satisfaction is significant. In addition, the results show that the direct effect of emotional value on behavioural loyalty (hypothesis 8) and customer satisfaction on behavioural loyalty (hypothesis 10) are also significant. The strength of the mediation is highlighted by the indirect effect divided by the total effect and has a value of 0.129/0.367 = 0.35. As a result, 35 per cent of emotional value's effect of behavioural loyalty is explained through the customer satisfaction mediator. Since the VAF is greater than 20 per cent, yet smaller than 80 per cent, this is an indication of **partial mediation** (Hair et al., 2014a). In summary, the findings suggest that the conceptual framework is **partially mediated.**

5.4 Summary and conclusions

This chapter discusses the data preparation approach for application of structural equation modelling based on the data collection results of the quantitative study. It further details the assessment of the conceptual framework *(Chapter Four)* with the structural equation modelling method PLS and draws conclusions regarding the research hypotheses. It concludes that nine out of 13 hypotheses of the conceptual framework are statistically significant. Additional testing of the conceptual framework is also presented to investigate the mediating role of customer satisfaction and the individual causal relationships in accord with a critical realist perspective for theory testing.

6 Discussion and conclusions

6.1 Introduction and overview

The final chapter aims to review the research results along five key themes, chosen to recapitulate the outcomes of the research and to incorporate a discussion of all research hypotheses. The broader implications for both academics and practitioners will be further articulated together with limitations of the research study and recommendations for future research. Finally, the chapter summarises the conclusions in terms of the overall contribution of the study.

It discusses five key themes including the research findings in relation to the research hypotheses and literature (6.2), broader implications of the research findings (6.3), limitations of the research based on the choices made in this study and the opportunities for future research (6.4), and the conclusions of the research study (6.5).

The major contribution of this research is theory testing. The goal of researchers evaluating theories is to offer 'judgements of superiority and inferiority' (Sayer, 1992: 206). In *Chapter Three* an integrative research process for testing theory was proposed in order to advance knowledge from a critical realist perspective. This was based on Miller and Tsang's (2010) research on testing management theories from a critical realist viewpoint. Adopting this rigorous process for a mixed methods study, C*hapter Three* outlined the four-step testing procedure as shown below. *Chapter Four* and *Chapter Five* highlighted the outcomes.

- Step 1: Identifying the hypothesised mechanisms from the qualitative study (stage 1) results (4.2);
- Step 2: Testing and confirming the presence of the mechanisms in the empirical setting by conducting a quantitative study (stage 2) (5.3);
- Step 3: Testing the isolated causal relations using PLS (5.3);
- Step 4: Testing the theoretical system using PLS (5.3).

Following accomplishment of this four-step process, the next section will discuss the research findings in relation to the research hypotheses (*Chapter Four*) and current literature (*Chapter Two*).

6.2 Discussion of research findings in regard to research hypotheses and literature

This section discusses the research findings along five key themes, chosen to outline the results of the research and to reflect on all research hypotheses. The five themes are presented below.

1. **The development of customer satisfaction (6.2.1)**
   The first theme explores the development of customer satisfaction as an outcome measure. In particular, the current research proposes three concepts of relationship value that directly impact on feelings of satisfaction.
2. **The development of behavioural loyalty (6.2.2)**
   The second theme investigates the development of behavioural loyalty. More specifically, the current research proposes three concepts that measure behavioural loyalty.
3. **The development of attitudinal loyalty (6.2.3)**
   The third theme evaluates the development of attitudinal loyalty. Notably, the current research affirms three concepts that directly influence attitudinal loyalty.
4. **The impact of the duration of the relationship (6.2.4)**
   The fourth theme investigates the effect of relationship age on the link between customer satisfaction and the two dimensions of loyalty, behavioural and attitudinal.
5. **The mediating role of customer satisfaction (6.2.5)**
   The fifth theme examines the central role that satisfaction plays in mediating the conceptual framework. This is meaningful from a conceptual perspective for theory development and to learn more about the relevance of satisfaction in the supplier-buyer relationship.

6.2.1 The development of customer satisfaction

The research study advances three concepts of relationship value that directly impact on the development of customer satisfaction. A summary of the research hypotheses and results pertaining to the development of customer satisfaction are shown in Table 6.1. The development of customer satisfaction is addressed by three research hypotheses, each of which is discussed below.

Table 6.1 Summary of research hypotheses and results relating to customer satisfaction

Hypothesis Number	Hypothesis	Support of Hypothesis
H1	Functional value will positively relate to customer satisfaction	Supported
H4	Social value will positively relate to customer satisfaction	Supported
H7	Emotional value will positively relate to customer satisfaction	Supported

Source: Author.

<u>Hypothesis 1:</u> The finding that functional value influences customer satisfaction.

From a theoretical perspective, relationship value is postulated as a 'cognitive-based construct which captures any benefit-sacrifice discrepancy' (Patterson and Spreng, 1997: 421), whereas customer satisfaction is primarily an affective evaluative response to a product or service experience (Oliver, 1993). The finding accords with the relationship marketing literature about the role that cognition plays in the initiation of affective responses (Weiner, 1986), reinforcing that functional relationship value assessments affect notions of satisfaction (Lam et al., 2004). The finding also supports the claim made in the service management literature that customer satisfaction is the consequence of a customer's perception of the value received from the relationship (Heskett et al., 1997). Furthermore, the finding is in agreement with existing B2B research which supports a positive relationship between functional relationship value and customer satisfaction (Patterson and Spreng, 1997; Eggert and Ulaga, 2002, Lam et al., 2004; Arslanagic-Kalajdzic and Zabkar, 2017).

<u>Hypothesis 4:</u> The finding that social value influences customer satisfaction.

The finding is consistent with the research of Prior (2013) who argue that social value plays an important role in complex business relationships. Further support that B2B customers benefit from social value is evidenced from the research in B2B brand communities by Bruhn et al. (2014) which is in accordance with the finding from this research. In addition, the data is in line with researchers such as Lemke et al. (2011) who examined differences in customer experience quality in B2B and B2C contexts and indicate that in the B2B domain customers are interested in whether a supplier delivers not just functional value, but also social value. Moreover, both Whittaker et al. (2007) and Arslanagic-Kalajdzic and Zabkar (2017) report a positive relationship between social value and customer satisfaction in the professional business services domain which the finding of this research study endorses.

<u>Hypothesis 7:</u> The finding that emotional value influences customer satisfaction.

The B2B literature offers evidence that emotions play a prominent role in understanding business purchasing behaviour (Lynch and De Chernatory, 2004; Hansen et al., 2008; Leek and Christodoulides, 2012; Prior, 2013; Candi and Kahn, 2016), which the finding from this research study acknowledges. The finding also provides further evidence to support the fact that personal interaction, one of the key elements of emotional value influences customer satisfaction in the B2B manufacturing domain (Čater and Čater, 2009).

However, emotions have been rarely analysed in the B2B domain (Fiol et al., 2011; Tähtinen and Blois, 2011; Arslanagic-Kalajdzic and Zabkar, 2017). Subsequently, in prior B2B research a significant link between emotional value and satisfaction has not been confirmed (Whittaker et al., 2007; Arslanagic-Kalajdzic and Zabkar, 2017). As a result, this finding offers a new perspective on emotional value consisting of interpersonal relationships, frustration and human touch, and its influence on customer satisfaction in B2B relationships.

<u>Implications of the results relating to hypotheses 1, 4 and 7</u>

The findings presented in this section support the notion that all three value dimensions of functional, social and emotional have a significant impact on customer satisfaction. These results highlight the relevance of emotions and social aspects of relationship value in B2B buyer's satisfaction. Importantly, it offers a new perspective of relationship value dimensionality by substantiating that all three dimensions of functional, social and emotional value influence customer satisfaction outcomes in the B2B manufacturing domain. In particular, the results offer a new perception of the role emotional value plays in satisfying buyers in the manufacturing industry, which has not previously been recognised in the B2B literature. The next section will discuss the second theme of behavioural loyalty development.

6.2.2 The development of behavioural loyalty

The research study advances three concepts that directly impact on the development of behavioural loyalty. A summary of the research hypotheses and results in regard to the development of behavioural loyalty are presented in Table 6.2. The development of behavioural loyalty is indicated by four research hypotheses, each of which is articulated next.

Table 6.2 Summary of research hypotheses and results relating to behavioural loyalty

Hypothesis Number	Hypothesis	Support of Hypothesis
H2	Functional value will positively relate to behavioural loyalty	Supported
H5	Social value will positively relate to behavioural loyalty	Not supported
H8	Emotional value will positively relate to behavioural loyalty	Supported
H10	Customer satisfaction will positively relate to behavioural loyalty	Supported

Source: Author.

<u>Hypothesis 2:</u> The finding that functional value influences behavioural loyalty.

Conceptual and empirical contributions to the B2B value literature suggest a direct influence of relationship value on customer loyalty (Eggert and Ulaga, 2002), which this research finding supports. The finding also confirms the claim made by Gross (1997) that in business markets cognitive factors will lead to purchasing decision making. Additionally, the finding is in line with the current literature which highlights functional relationship values positive impact on behavioural loyalty in B2B research (Eggert and Ulaga, 2002; Lam et al., 2004; Čater and Čater, 2009). From a theoretical viewpoint the finding also validates the argument for the theory of consumption values being applied to the multidimensional concept of relationship value including a functional component (Arslanagic-Kalajdzic and Zabkar, 2017), which impacts on buyer behaviour in a B2B context.

<u>Hypothesis 5:</u> The finding that social value does not influence behavioural loyalty.

In the assessment of social value, both image and reputation of the supplier can enhance the social perception of the customer firm (Arslanagic-Kalajdzic and Zabkar, 2017). Conceptual contributions in the B2B literature supports that both image and reputation impacts relationship outcomes such as customer loyalty (Andreassen and Lindestad, 1998; Pan et al., 2012), green image influences customer loyalty (Mustonen et al., 2016) and reputation affects customer loyalty (Khan et al., 2020). However, despite these prior findings the research of Whittaker et al. (2007) could not find a linkage between social value and loyalty in the UK business services domain, operationalising loyalty as repeat business. In addition, Arslanagic-Kalajdzic and Zabkar (2017) were also unable to establish a significant link between social value and loyalty. For their B2B services study loyalty was operationalised more generally, but included one item of repurchase intention in its measurement. The finding of this research study appears to replicate the results of Whittaker et al. (2007) and Arslanagic-Kalajdzic and Zabkar (2017), and suggests that social value consisting of image and reputation does not have a significant influence on behavioural loyalty in the B2B domain.

Whittaker et al. (2007) argue that this finding can be explained by the different contextual elements of the B2B domains under investigation in addition to the structural and market aspects of those domains. In other words, for the study of Mustonen et al. (2016) which supports green image's influence on customer loyalty. This research was based in the B2B manufacturing domain with 121 survey responses from 25 different countries. Moreover, Khan et al's (2020) study, which confirmed reputation's impact on customer loyalty, was conducted in the B2B services domain in Pakistan with 181 survey responses. Comparing these findings to the B2B service studies of Whittaker et al. (2007) and Arslanagic-Kalajdzic and Zabkar (2017) where no support could be found for the linkage between social value and behavioural loyalty. These research studies were carried out in the UK with a survey sample size of 78 for Whittaker et al. (2007) and a Central European country with 228 survey responses for Arslanagic-Kalajdzic and Zabkar (2017). Overall, these findings provide support to Whittaker et al's (2007) argument that the finding of social value not influencing behavioural loyalty compared to prior research results of Mustonen et al. (2016) and Khan et al. (2020) may be explained by the differing B2B domains under examination with varying structural and market aspects.

<u>Hypothesis 8:</u> The finding that emotional value influences behavioural loyalty.

Support for emotional value influencing behaviour resides within the B2B branding literature (Lynch and De Chernatory, 2004; Leek and Christodoulides, 2012), which is further evidenced by this finding. Additionally, the finding also supports the argument by Tähtinen and Blois (2011: 908) 'that both human decision making and actions are embedded in emotions' for B2B relationships.

However, there are varying results from the B2B literature regarding the relationship of emotional value on loyalty. Whittaker et al. (2007) found no linkage between emotional value and loyalty using a small sample size of 78 participants and operationalising loyalty as repeat business in their UK B2B services study. Whereas, the B2B services research of Arslanagic-Kalajdzic and Zabkar (2017) found a link between emotional value and customer loyalty, operationalising loyalty to include one item of repurchase intention in its measurement. The findings of this research study are more closely aligned to the results of Arslanagic-Kalajdzic and Zabkar's (2017) study and highlight the important linkage between emotional value and behavioural loyalty. This finding offers a new perspective on emotional value consisting of interpersonal relationships, frustration and human touch, and its development on behavioural loyalty in the B2B domain. From a theoretical viewpoint the finding also confirms the notion that the theory of consumption values can be applied to the multidimensional concept of relationship value including an emotional component (Arslanagic-Kalajdzic and Zabkar, 2017) effecting B2B buyer behaviour.

Hypothesis 10: The finding that customer satisfaction influences behavioural loyalty.

Satisfaction's positive impact on behavioural loyalty has been extensively supported in B2B research (Eggert and Ulaga, 2002; Lam et al., 2004; Čater and Čater, 2009; Russo et al., 2016; Jeong and Oh, 2017; Almomani, 2019; Huang et al., 2019; Sharma, 2022). The finding from this study supports these results from the B2B literature. Moreover, in the social psychology literature Thibaut and Kelley (1959) argue that satisfaction judgements are recognised as cumulated prior experiences and that these satisfying experiences increase the desire to stay in the relationship. As a result, a positive relationship between customer satisfaction and customer loyalty is consistent with social exchange theory (Wangenheim, 2003), which is supported by the finding of this research.

Implications of the results relating to hypotheses 2, 5, 8 and 10

The findings discussed in this section support the viewpoint that two value dimensions of functional and emotional together with customer satisfaction have a significant impact on behavioural loyalty. These results highlight the importance of emotions and satisfaction in addition to functional value in the development of behavioural loyalty. The findings also endorse the theoretical viewpoint that functional and emotional value, two of three value dimensions, have an impact on buyer behaviour in a B2B domain through consumption value theory. Overall, these findings offer a new perspective on how to enhance behavioural loyalty through customer satisfaction, and functional and emotional elements of relationship value. More specifically, the findings show the importance of emotional value in assessing behavioural loyalty which has not been previously reported in the B2B literature. The next section will discuss the development of the other loyalty dimension of attitudinal loyalty.

6.2.3 The development of attitudinal loyalty

The research study proposes three concepts that directly influence the development of attitudinal loyalty. A summary of the research hypotheses and results pertaining to the development of attitudinal loyalty are highlighted in Table 6.3. The development of attitudinal loyalty is addressed by four research hypotheses, each of which is presented below.

Table 6.3 Summary of research hypotheses and results relating to attitudinal loyalty

Hypothesis Number	Hypothesis	Support of Hypothesis
H3	Functional value will positively relate to attitudinal loyalty	Supported
H6	Social value will positively relate to attitudinal loyalty	Supported
H9	Emotional value will positively relate to attitudinal loyalty	Not supported
H11	Customer satisfaction will positively relate to attitudinal loyalty	Supported

Source: Author.

Hypothesis 3: The finding that functional value influences attitudinal loyalty.

B2B research advances a direct impact of relationship value on customer loyalty (Eggert and Ulaga, 2002), which this finding confirms. Moreover, a positive influence of functional relationship value on attitudinal loyalty has also been highlighted in the B2B literature (Eggert and Ulaga, 2002; Yuan et al., 2020). This result is also acknowledged by the finding of this research study. In addition, from a theoretical perspective the finding provides evidence that consumption value theory can be expanded to business markets (Sheth et al., 1991; Candi and Kahn, 2016; Arslanagic-Kalajdzic and Zabkar, 2017) and used to explain functional values influence on buyer behaviour.

Hypothesis 6: The finding that social value influences attitudinal loyalty.

In the evaluation of social value, both image and reputation of the supplier can increase the social perception of the customer firm (Arslanagic-Kalajdzic and Zabkar, 2017). Conceptual contributions acknowledge that there is a direct influence of image and reputation on customer loyalty (Andreassen and Lindestad, 1998; Pan et al., 2012), green image on customer loyalty (Mustonen et al., 2016) and reputation on customer loyalty (Khan et al., 2020). However, Whittaker et al. (2007) could not find any linkage between the social value and loyalty using a small sample size of 78 participants and operationalising loyalty as repeat business. In addition, Arslanagic-Kalajdzic and Zabkar (2017) were also unable to find a significant link between social value and loyalty in their B2B services study. Consequently, the finding from this research study offers a new perspective on social value consisting of reputation and image, and its development on attitudinal loyalty in the B2B domain. From a theoretical viewpoint the finding also demonstrates the concept that the theory of consumption values is applicable to the multidimensional concept of relationship value including a social dimension for understanding B2B buyer behaviour (Arslanagic-Kalajdzic and Zabkar, 2017).

<u>Hypothesis 9:</u> The finding that emotional value does not influence attitudinal loyalty.

In their B2B research study on the involvement and influence of emotions in problematic business relationships, Tähtinen and Blois (2011: 908) argue 'that both human decision making and actions are embedded in emotions'. Consequently, Arslanagic-Kalajdzic and Zabkar (2017) found a link between emotional value and customer loyalty, operationalising loyalty to include one item of repurchase intention in its measurement. In addition, personal interaction, one of the key dimensions of emotional value was shown to influence attitudinal loyalty in the B2B manufacturing industry (Čater and Čater, 2009). However, Whittaker et al. (2007) found no linkage between emotional value and loyalty in their UK B2B services study, operationalising loyalty as repeat business.

Overall, the current B2B literature offers little empirical evidence to provide an understanding of the proposed relationship of emotional value on attitudinal loyalty (buyer's willingness to recommend and say positive things about the supplier). Prior research studies operationalise loyalty generally or as repeat business (Whittaker et al., 2007; Arslanagic-Kalajdzic and Zabkar, 2017). As a consequence, the finding from this research study offers a new perspective that emotional value has no significant impact on attitudinal loyalty which has not been reported in earlier B2B research.

<u>Hypothesis 11:</u> The finding that customer satisfaction influences attitudinal loyalty.

The positive influence of satisfaction on attitudinal loyalty has been comprehensively researched in the B2B literature (Eggert and Ulaga, 2002; Lam et al., 2004; Chandrashekaren et al., 2007; Rauyruen and Miller, 2007; Čater and Čater, 2009; Almomani, 2019; Huang et al., 2019; Sharma, 2022), which the finding from this study supports. From a theoretical perspective a positive relationship between customer satisfaction and loyalty is also consistent with social exchange theory (Wangenheim, 2003), which is endorsed by the research finding.

<u>Implications of the results relating to hypotheses 3, 6, 9 and 11</u>

The findings depicted in this section support the notion that two value dimensions of functional and social together with customer satisfaction have a significant impact on attitudinal loyalty. These results highlight the importance of social perceptions and satisfaction in addition to functional value in the development of attitudinal loyalty. The findings also endorse the theoretical viewpoint that functional and social value, two of three value dimensions, have an impact on buyer behaviour in a B2B domain through consumption value theory.

Overall, these findings offer a new perspective on how to enhance attitudinal loyalty through customer satisfaction, and functional and social elements of relationship value in the B2B domain. In particular, the findings show the importance of social value in assessing attitudinal loyalty which has not been previously acknowledged in the B2B literature. Furthermore, the reported finding that emotional value does not have a significant influence on attitudinal loyalty has also not been previously recognised in the B2B loyalty literature. The next section will discuss the influence of the duration of the relationship on the satisfaction-loyalty link.

6.2.4 The influence of the duration of the relationship

The research study advocates that the duration of the relationship does not significantly influence customer loyalty. A summary of the research hypotheses and results relating to the impact of relationship age are shown in Table 6.4. The influence of relationship length is addressed by two research hypotheses, each of which is outlined below.

Table 6.4 Summary of research hypotheses and results relating to duration of the relationship

Hypothesis Number	Hypothesis	Support of Hypothesis
H12	Duration of the relationship strengthens the link between customer satisfaction and behavioural loyalty	Not supported
H13	Duration of the relationship strengthens the link between customer satisfaction and attitudinal loyalty	Not supported

Source: Author.

<u>Hypothesis 12 and 13:</u> The finding that the duration of the relationship does not strengthen the link between customer satisfaction and both behavioural and attitudinal loyalty.

Despite a body of literature suggesting that the length of a supplier-buyer relationship influences the customer satisfaction-loyalty link (Homburg et al., 2003; Wangenheim, 2003; Chandrashekaren et al., 2007), no evidence of this viewpoint could be found from the results of this research study. Empirical support for duration of the relationship strengthening the link between customer satisfaction and attitudinal loyalty has been acknowledged in the B2B literature (Wangenheim, 2003; Chandrashekaren et al., 2007). However, the results of this research study appear to more closely align to the findings of Arslanagic-Kalajdzic and Zabkar (2017) who found that relationship age did not have a significant influence on customer loyalty in the B2B services domain.

Implications of the results relating to hypotheses 12 and 13

The findings discussed in this section support the notion that the duration of the relationship on its own has no significant effect on B2B customer loyalty. When the length of a relationship with a supplier is increasing, buying firms do not thereby become more loyal. The results of this study imply that their loyalty is determined by other factors, which holds true for each dimension of customer loyalty.

6.2.5 The mediating role of customer satisfaction

It is proposed that customer satisfaction not only directly impacts the two customer loyalty dimensions, but also mediates the impact of multidimensional relationship value on both components of loyalty. The conceptual framework was tested for mediation based on Baron and Kenny (1986). The results suggest that the conceptual framework is partially mediated as shown below:

- Customer satisfaction partially mediates the relationship between functional value and behavioural loyalty;
- Customer satisfaction partially mediates the relationship between functional value and attitudinal loyalty;
- Customer satisfaction partially mediates the relationship between social value and attitudinal loyalty;
- Customer satisfaction partially mediates the relationship between emotional value and behavioural loyalty.

The findings are in accordance with the B2B literature which confirms that satisfaction is a mediating construct between functional value and customer loyalty (Patterson and Spreng, 1997; Lapierre et al., 1999; Eggert and Ulaga, 2002; Ruiz-Martinez et al., 2019). However, there are varying degrees of literature support to whether satisfaction acts as a partial or total mediator. In Lam et al's (2004) B2B services study customer satisfaction was found to totally mediate the impact of functional value on the recommend dimension of loyalty, yet for the patronage (repurchase) dimension of loyalty the mediation was partial. Arslanagic-Kalajdzic and Zabkar, (2017) also found that satisfaction fully mediates the effect of the functional value on loyalty in addition to the effect of social value on loyalty. Moreover, Whittaker et al. (2007) reports results that conclude that satisfaction only partially mediates the functional value and loyalty (repurchase) relationship in the UK B2B services industry. The findings from this research study appear to align more closely with the previous studies of Lam et al. (2004) and Whittaker et al. (2007) who report that the mediation role of satisfaction is partial.

Implications of the results relating to the mediating role of customer satisfaction

The findings discussed in this section support the notion that customer satisfaction plays a key role as a mediator in the relationship between customer value and customer loyalty in B2B research. The findings show that satisfaction partially mediates the effect of functional value on both loyalty dimensions. In addition, satisfaction also partially mediates the effect of social value on attitudinal loyalty and the impact of emotional value on behavioural loyalty. The findings extend the prior research of Lam et al. (2004) and Whittaker et al. (2007) in the B2B services domain by reporting satisfaction's partial mediating effect of functional and social value on attitudinal loyalty, and emotional value on behavioural loyalty in the manufacturing sector.

These findings offer a new phenomenon in B2B research and have important implications for theory development. Theoretical justification for the mediating role of customer satisfaction can be associated with TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980), being a well-researched intention model from the social psychology literature. According to TRA, cognitive attributes are mediated by affective ones resulting in behavioural outcomes (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). These findings support the argument for TRA providing a theoretical explanation of customer buyer behaviour and a framework for this research study. Researchers wanting to build on the theory of Fishbein and Ajzen (1975) might contemplate using partial mediation in theory building based on the findings of this study. The next section discusses the research findings with respect to the broader implications.

6.3 Broader implications of the research findings

6.3.1 Overview

The previous section discussed the research findings in terms of five key themes and their relation to the research hypotheses set out in the conceptual framework (*Chapter Four*) and the current literature (*Chapter Two)*. The next section looks at the wider implications for both academics and practitioners in the manufacturing industry in terms of theoretical and practical inferences.

6.3.2 Theoretical implications

The main contribution of the thesis is to add to the body of knowledge on customer satisfaction and loyalty in the B2B domain. This is achieved by extending the relationship value dimensionality and substantiating that the three dimensions of functional, social and emotional value relate differently with regard to their customer satisfaction and loyalty outcomes. The study contributes to the body of knowledge in seven key areas:

- Firstly, the proposed conceptual framework notably extends the B2B research undertaken by Fiol et al. (2009) which investigates the impact of relationship value on customer satisfaction and loyalty in the Spanish tile manufacturing industry. This research study advances a multidimensional conceptualisation of relationship value and explores the direct influence of functional, social and emotional relationship value on loyalty. Additionally, it also transfers the main elements of Arslanagic-Kalajdzic and Zabkar's (2017) framework from B2B services to B2B manufacturing and extends their research by exploring the impact of the functional, social and emotional relationship value on both behavioural and attitudinal loyalty (Arslanagic-Kalajdzic and Zabkar, 2017). The findings of this research show that the three relationship dimensions correlate differently in relation to their outcomes. Functional and emotional value influence behavioural loyalty, whereas functional and social value impact attitudinal loyalty. Additionally, customer satisfaction influences both loyalty dimensions. The findings of this research are important as they provide recommendations on how to maximise customer loyalty through strategic combinations of relationship value in the manufacturing industry. Notably, the findings offer a new theoretical perspective of the role social and emotional value play in creating loyal customers in the manufacturing industry, which the B2B literature has not previously recognised;
- Secondly, it expands the research of Arslanagic-Kalajdzic and Zabkar's (2017) by transferring additional elements of their conceptual framework from B2B services to B2B manufacturing and offers new insights into the relationships between social and emotional value on customer satisfaction. The research findings underline the importance of emotions and social aspects of relationship value in buyer's satisfaction, and offers a new perspective of relationship value dimensionality by establishing that all three dimensions of functional, social and emotional value influence customer satisfaction outcomes in the B2B domain. In particular, the findings offer a new theoretical perception of the role emotional value plays in the

buyer's feelings of satisfaction in the manufacturing industry, which has not previously been acknowledged in the B2B literature;

- Thirdly, the key role of customer satisfaction as a mediator in the relationship between customer value and customer loyalty is confirmed. The findings show that satisfaction partially mediates the effect of functional value on both loyalty dimensions. In addition, satisfaction also partially mediates the effect of social value on attitudinal loyalty and the effect of emotional value on behavioural loyalty. The research findings align with those reported by Lam et al. (2004) and Whittaker et al. (2007) in the B2B services domain and extends their research by reporting satisfaction's partial mediating effect of functional and social value on attitudinal loyalty, and emotional value on behavioural loyalty. Theoretical justification for the mediating role of satisfaction can be associated with the TRA framework from the social psychology literature (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). According to TRA, cognitive attributes are mediated by affective ones resulting in behavioural outcomes. The research findings are consistent with TRA which provides the theoretical underpinning of the framework for this study. Researchers wishing to build on the theory of Fishbein and Ajzen (1975) might consider using partial mediation in theory building based on the study findings;
- Fourthly, more generally, it offers a new perception of the linkages between relationship value as a multidimensional cognitive construct, customer satisfaction as an affective construct and customer loyalty as a multidimensional behavioural construct expanding the B2B research of Ruiz-Martinez et al. (2019);
- In fifth, insights into the moderating effect of the duration of the relationship on the satisfaction-loyalty link in the relationship marketing literature are also provided by the research study results. Despite a body of literature suggesting that the length of a supplier-buyer relationship influences the customer satisfaction-loyalty link (Homburg et al., 2003; Wangenheim, 2003; Chandrashekaren et al., 2007), no evidence of this viewpoint could be found from the results of this research study. This finding appears to reflect the results reported by Arslanagic-Kalajdzic and Zabkar (2017) who found that relationship age had no significant influence on customer loyalty in their B2B study. The result suggests that the duration of the relationship on its own has no significant effect on B2B customer loyalty. When the length of a relationship with a supplier is increasing, buying firms do not thereby become more loyal. The results of this study imply that their loyalty is determined by other factors, which holds true for both dimensions of customer loyalty;

- In sixth, this research offers a new theoretical concept for emotional value consisting of interpersonal relations, frustration and human touch. The emotional dimension of relationship value originates from the feelings and emotions that the product or service provokes in the buyer (Fiol et al., 2011). From the current B2B literature, Fiol et al. (2009, 2011) defines three factors supporting the emotional dimension of relationship value including experience (Brown et al., 1995; Sweeney and Soutar, 2001), personalised treatment (Barnes, 2003) and interpersonal relationships (Ulaga, 2003; Ulaga and Eggert, 2005, 2006a). However, only interpersonal relationships were identified in the qualitative research (stage 1) conducted by this study. From the ten interviews undertaken with participants responsible for purchasing management of UK manufacturing firms, frustration, and human touch, often referred to as social interaction (Murphy and Sashi, 2018; Ruiz-Martinez et al., 2019) were also identified. The quantitative research (stage 2) results confirmed support for the new theoretical concept of emotional value featuring frustration and human touch in addition to interpersonal relationships;
- Finally, the study findings also show that the theory of consumption values can be applied to business markets including manufacturing. Previously consumption value theory has only been used in the development of a multidimensional concept of relationship value including functional, social and emotional components in the B2B services domain (Arslanagic-Kalajdzic and Zabkar, 2017). As a consequence, such an application opens a new stream of research that will support the understanding of value perceptions in the B2B manufacturing industry.

In answering the principal research question and two sub-questions highlighted in *Chapter One*:

1. What factors drive customer loyalty in UK manufacturing companies?
    a. How do functional, social and emotional relationship value influence customer satisfaction and loyalty in a B2B manufacturing context?
    b. How does relationship age influence the satisfaction-loyalty link in a B2B manufacturing context?

Table 6.5 presents a summary of the intended contribution to the literature as set out in *Chapter One* compared to the actual contribution to knowledge of this research study based on the findings. These are represented as primary contribution claims. Additional secondary claims of contribution are also shown which result from the four further key study findings:

- The partial mediating role of customer satisfaction;
- A new perception of the linkages between the constructs with cognitive perceptions of relationship value interacting with affective feelings of satisfaction leading to behavioural intentions;
- A new theoretical concept for emotional value;
- The application of the theory of consumption values to the B2B manufacturing domain.

This section highlights the theoretical implications of the research results and the contribution of this study to knowledge. The next section reviews the practical implications.

Table 6.5 Summary of intended compared to actual contribution to knowledge

Contribution claim	Intended contribution	Research findings	Importance	Actual contribution to knowledge
Primary	The impact of social and emotional relationship value on behavioural and attitudinal loyalty.	The findings of this research show that the three relationship dimensions correlate differently in relation to their outcomes. Functional and emotional value influence behavioural loyalty, whereas functional and social value impact attitudinal loyalty.	Provides recommendations on how to maximise customer loyalty through strategic combinations of relationship value in the manufacturing industry.	Offers a new theoretical perspective of the role social and emotional value play in creating loyal customers in the manufacturing industry through behavioural and attitudinal loyalty dimensions, which the B2B literature has not previously recognised.
Primary	The influence of social and emotional relationship value on customer satisfaction.	The research findings underline the importance of emotions and social aspects of relationship value in buyer's satisfaction, and demonstrates that all three dimensions of functional, social and emotional value influence customer satisfaction outcomes in the B2B domain.	Provides guidance on how to improve customer satisfaction through different elements of relationship value in the manufacturing industry.	Offers a new theoretical perception of the role emotional value plays in the buyer's feelings of satisfaction in the manufacturing industry, which has not previously being acknowledged in the B2B literature.
Primary	Insights into the moderating effect of the duration of the relationship on the satisfaction-loyalty link.	The results suggests that the duration of the relationship on its own has no significant effect on B2B customer loyalty.	When the length of a relationship with a supplier is increasing, buying firms do not thereby become more loyal, implying that buyer's loyalty is determined by other factors, which holds true for both dimensions of customer loyalty.	Does not contribute to knowledge as findings already reported by previous research of Arslanagic-Kalajdzic and Zabkar (2017).
Secondary		The findings show that satisfaction partially mediates the effect of functional value on both loyalty dimensions. In addition, satisfaction also partially mediates the effect of social value on attitudinal loyalty and the effect of emotional value on behavioural loyalty.	Highlights satisfaction's key role as a mediating variable between relationship value and customer loyalty. Offers support for TRA which provides the theoretical underpinning of the framework for this study.	Extends prior B2B services research of Lam et al. (2004) and Whittaker et al. (2007) by reporting satisfaction's partial mediating effect of functional and social value on attitudinal loyalty, and emotional value on behavioural loyalty in the B2B manufacturing domain. Researchers wishing to build on the theory of Fishbein and Ajzen (1975) might consider using partial mediation in theory building based on the study findings.
Secondary		The findings provide evidence of the linkages between relationship value as a multidimensional cognitive construct, customer satisfaction as an affective construct and customer loyalty as a multidimensional behavioural construct.	Provides support for previous research findings found in the manufacturing domain (Eggert and Ulaga, 2002; Ulaga and Eggert, 2006b).	Offers a new perception of the linkages between relationship value as a multidimensional cognitive construct, customer satisfaction as an affective construct and customer loyalty as a multidimensional behavioural construct expanding the B2B research of Ruiz-Martinez et al. (2019).
Secondary		In comparison to the literature which defined three factors of emotional value including experience (Brown et al., 1995; Sweeney and Soutar, 2001), personalised treatment (Barnes, 2003) and interpersonal relationships (Ulaga, 2003; Ulaga and Eggert, 2005, 2006a), the findings could only confirm interpersonal relationships as central to emotional value. Instead, the research underlined two other factors of frustration and human touch as pivotal in the understanding of business purchasing relationships.	Provides evidence of emotional values pivotal role in relationship value dimensionality.	Offers a new theoretical concept for emotional value consisting of interpersonal relations, frustration and human touch.
Secondary		The findings show that the theory of consumption values can be applied to business markets including manufacturing.	Previously consumption value theory has only been used in the development of a multidimensional concept of relationship value including functional, social and emotional components in the B2B services domain (Arslanagic-Kalajdzic and Zabkar, 2017).	The application of the theory of consumption values opens a new stream of research that will support the understanding of value perceptions in the B2B manufacturing industry.

Source: Author

6.3.3 Practical implications

The COVID-19 pandemic and Brexit have caused considerable global disruption to supply chains, operational shutdowns and reduced output at factories. There has been a sharp increase in the price of commodities that are used to manufacture products including steel, aluminium, copper, resins and plastics. Furthermore, rapid and continued increases in global demand of semiconductors and historically low inventories throughout the supply chain, have caused extreme limitations of materials resulting in severe shortages of semiconductors and significant price increases, affecting manufacturers in the UK.

Against this background, this research provides valuable insights for purchasing managers in the manufacturing industry. As the majority of the hypothesised relationships in the conceptual framework are supported, suppliers cannot just rely on functional value, but must also develop positive social and emotional value notions in order to create mutually favourable relationships in the manufacturing sector. The findings of the research offer suppliers important guidelines and a toolkit for establishing, developing, and maintaining successful relationships with their customers. Critically, managers of supplier firms can utilise the research findings in two important business areas.

Firstly, firms heavily invest in the establishment of marketing information systems that amalgamate external customer information and in-house performance metrics (McLeod and Rogers, 1985), for measurement of customer satisfaction. According to Čater and Čater (2009: 593) ‘the identified antecedents of customer satisfaction have direct implications in the field of strategy development’. Therefore, as the research findings provide evidence that all three value perceptions of functional, social and emotional have an influence on customer satisfaction, suppliers need to consider both social aspects and emotions in addition to functional value notions in order to develop and implement effective strategies to drive customer satisfaction. As a result, suppliers are recommended to differentiate themselves by establishing strategic partnerships with their customers. There are several key advantages for suppliers who develop a differentiation strategy through partnerships. The initial benefit is that it helps to remove the issue of selling just on price. A further point is that it provides the opportunity for suppliers to illustrate that they have products which are different from the competition, particularly when there is strong price pressure in the market, as the case during the COVID-19 pandemic.

For the second business area, supply managers must take into consideration that customer loyalty has two dimensions, both of which appear to have different determinants. The research findings show that customer satisfaction plays a key role in the determination of both behavioural and attitudinal customer loyalty. In addition, the findings indicate that functional and emotional value positively influence behavioural loyalty, whereas functional and social value impact attitudinal loyalty.

As a result, if suppliers want their customers to continue the relationship and repurchase their products, they are advised to focus on developing the functional and emotional aspects of value. Therefore, suppliers must maintain a strong focus on the elements of functional value including price, product quality, know how and delivery performance, in addition to interpersonal relationships between the supplier and buyer being a fundamental component of emotional value. It is therefore critical that the people involved in the supplier-buyer relationship are happy working together and supplier management continue to develop the day-to-day relationships between their own personnel and the buyer of the manufacturing firm in order to positively influence behavioural outcomes. This confirms Johnston and Hausman's (2006) argument that a company unquestionably comprises of individuals who impact its relationships with its partners. That is to say, even though relationships in the business-to-business domain are between firms, it is the actual employees that fulfil different activities in the relationship. This is key for determining future delivery forecasts with suppliers and how buyers work collaboratively with suppliers to create behavioural loyalty.

Moreover, the findings also underline that for suppliers wishing to influence their customer's willingness to recommend and say positive things about them, they are required to concentrate their effects on functional and social aspects of value. The supplier needs to create value through price, product quality, know how and delivery performance being key components of the functional dimension. Moreover, social value is also shown to be important, with reputation and image of the supplier's firm being fundamental elements of social value. As a result, it is critical that the supplier's firm develops a good reputation and image in the market place in order to positively impact attitudinal loyalty. This factor has been evident during the COVID-19 pandemic. Where previously buyers had invested time and resources in working with Chinese suppliers in order to drive down material prices, they are now also having to consider the reputation and image of Chinese supplier firms. This is against a backdrop of poor delivery performance and communication issues due to persistent lockdowns in China which are disrupting global supply chains. With this in mind, the research results provide clear direction to suppliers on which dimension of value to concentrate their efforts to positively impact their customers behavioural and attitudinal loyalty.

The research results also highlight that relationship age provides no guarantee of customer loyalty. When the length of a relationship with a supplier is increasing, it does not follow that buying firms become more loyal. Therefore, suppliers must look to other factors in their toolkit to maintain successful buyer relationships.

Overall, the research study provides policymakers within the UK manufacturing industry and government with an improved understanding of the role customer loyalty plays within it, encouraging them to support manufacturing through investment in people, equipment and plant. The pandemic and mounting geopolitical tensions have undermined the mass outsourcing model, with suppliers now looking at other factors to drive value, which this study highlights.

6.4 Limitations and suggestions for further research

This study expands knowledge on the antecedents of customer loyalty in the manufacturing industry. However, the research is not without limitations, and it is these that offer opportunities for further research (Athanasopoulou and Giovanis, 2015). As the findings of the study are from the manufacturing industry in the UK, this may limit the generalisability of the results. Further research could reproduce the study in alternative countries and industries. In addition, a further limitation of this study is that it does not incorporate the entire buying center of the manufacturing firm, but rather concentrates on the key purchasing decision makers in each company. A considerable amount of the business marketing research focuses on one main contact, particularly with reference to customer loyalty. However, account-based marketing (ABM) points researchers to a return to the buying center concept (Tanner, 2021). Future research could therefore gain an understanding of how customer loyalty varies across the organisation by incorporating the views of different buying center members.

Another limitation of the study is that data was only collected from the customer’s side. To this extent the research only studied the buyer’s viewpoint. A supplier’s perspective may be different. Additional research could widen the scope of the study to encompass views from both sides of the dyad. Furthermore, the findings of the research were based on a cross-sectional design which limits the capability of the study to observe any temporal changes in the research constructs. As a result, further research could adopt a longitudinal study design to develop an understanding of the changing aspects of long-term relationships in the manufacturing industry.

Moreover, in order to gain additional insights into the relationship value dimensionality, further research in the B2B manufacturing industry could adopt the theory of consumption values. In addition, new research could expand the dimensions of relationship value to include epistemic value supported by the theory of consumption values. Epistemic value being defined as ‘the perceived utility acquired from an alternative’s capacity to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge' (Sheth et al., 1991: 162). From the current B2B literature, Whittaker et al. (2007) found a significant link between epistemic value and loyalty in their UK B2B services study, operationalising loyalty as repeat business. Further research could extend Whittaker et al's (2007) study by investigating the relationship of epistemic value on behavioural and attitudinal loyalty in the manufacturing industry. Moreover, as this research study finds a new theoretical concept for emotional value consisting of interpersonal relations, frustration and human touch. Further research could explore this concept in understanding business purchasing behaviour.

Finally, a methodological limitation of the current study applies to the issue of contingency. The research presents linear relationships between all constructs in the conceptual framework. Therefore, it makes the assumption that increases in predictor constructs will lead to continual increases in outcome constructs. This confers with the theories on which the conceptual framework is based (Fishbein and Ajzen, 1975; Fiol et al., 2009; Arslanagic-Kalajdzic and Zabkar, 2017) and with the current B2B academic research in this area. Future research could investigate the nature of the relationships between the constructs in the conceptual framework, assuming that non-linear relationships exist. In analysing non-linear effects, assumptions need to be made regarding the nature of the effect between the two constructs. While different effect types are possible, quadratic effects are the most common and could be estimated using PLS (Hair et al., 2018), offering the opportunity for further research.

6.5 Conclusions

From a theoretical perspective, this study makes a number of valuable contributions to the relationship marketing literature. Grounded in existing B2B manufacturing research studies of Eggert and Ulaga (2002) and Ulaga and Eggert (2006b), this study notably extends the B2B research undertaken by Fiol et al. (2009) and Arslanagic-Kalajdzic and Zabkar (2017), and confirms the importance of social and emotional relationship value aspects on customer satisfaction and loyalty outcomes in the manufacturing industry. Importantly, the findings offer a new theoretical perspective of the role social and emotional value play in creating loyal customers and the role emotional value performs in buyer's feelings of satisfaction in the B2B domain. The findings also suggest that customer satisfaction acts as a partial mediator in the relationship between customer value and customer loyalty which extends the current B2B research. Moreover, a new theoretical concept of emotional value featuring frustration and human touch in addition to interpersonal relationships is also evidenced from the research results.

Furthermore, the study also shows that the theory of consumption values can be applied to B2B markets. Previously consumption value theory has only been used in the development of a multidimensional concept of relationship value including functional, social and emotional components in the B2B services domain (Arslanagic-Kalajdzic and Zabkar, 2017). As a consequence, such an application opens up a new stream of research that will help in understanding the creation of value perceptions in the B2B manufacturing industry.

The results propose that behavioural loyalty can be expressed through customer satisfaction, and functional and emotional elements of relationship value. Whereas, attitudinal loyalty can be conveyed by customer satisfaction, and functional and social components of relationship value. These relationships are in turn also partially mediated through customer satisfaction. The results also indicate that all three dimensions of functional, social and emotional value influence customer satisfaction outcomes. Overall, the study provides recommendations on how to maximise customer loyalty through strategic combinations of relationship value. In addition, it provides guidance on how to improve customer satisfaction through different elements of relationship value in the manufacturing industry.

The war in Ukraine, lockdowns in China, supply-chain disruptions and the risk of growing inflation are all causing major challenges for the UK manufacturing industry. The research study findings offer suppliers important guidelines and a toolkit for establishing, developing, and maintaining successful relationships with their customers in the manufacturing industry. It provides direction to practitioners on which dimension of value to concentrate their efforts in order to drive customer satisfaction and loyalty. Overall, the research study gives policymakers within the UK manufacturing industry and government an improved understanding of the role customer loyalty plays within it, encouraging them to support manufacturing through investment in people, equipment and plant.

To the best of the author’s knowledge, the research study is the first to provide an insight of how the different components of functional, social and emotional relationship value vary in measuring customer satisfaction and loyalty in B2B supplier-buyer relationships in the manufacturing industry. As a result of this research study, both practitioners in the manufacturing industry and academics in the field of relationship marketing will benefit from a new perspective on the antecedents of B2B customer loyalty in the manufacturing industry.

Appendix A

Interview guide for customer loyalty interviews

Part 1. How participants view the manufacturing industry

How would you describe the industry you are working in (i.e., issues, developments, key players, biggest challenges for example technological, political, and economic challenges)?

How are you engaging in the industry (i.e., projects, activities, professional partners)?

What's your goal in doing this work?

How do you go about achieving this goal? Give examples (i.e., with whom, resources, approaches, networks).

Part 2. How participants view their company

Tell me about your company, what do you like or dislike?

Tell me more about your role. Describe your normal day at work, what do you do?

What motivates you to do this job?

How do you evaluate your work?

Tell me about who do you mostly work with (within the company and outside the company)?

Is there anything that stands out as significant since you started working here?

What did you use to do before this role?

Part 3. How participants view relationships with suppliers

Tell me about your relationships with suppliers. Who do you mostly work with? Who do you consider having an important relationship with? Give specific examples.

What is your interpretation of 'collaboration' with a supplier?

What is your interpretation of 'loyalty' in this industry? Can you give me some examples of what you consider to be a 'loyal' relationship? What do you think the characteristics of a loyal relationship are? How would you describe a 'loyal' relationship with suppliers?

Have there been instances where relations with suppliers have broken down? Can you give me some specific examples of what happened at the time?

Can you tell me in what way do you think suppliers add ‘value’ to the organisation?

Can you give me a specific example of how you have learnt from engaging with different suppliers?

What and who has shaped your work with suppliers? Give specific examples.

Part 4. How participants felt when working with suppliers

Give me an example of an activity with a supplier that made you feel proud, or happy. What happened that made you feel this way?

Did you ever get upset, frustrated, and angry when working with suppliers? Tell me more about that.

Do you remember other activities, events, projects that made you feel emotionally charged when working with suppliers? Give me specific examples. What did other colleagues make of this situation at the time? What have you learnt from this experience?

Closing the interview

Thank the participant for taking part in the interview. Ask them to reflect on what they have said during the interview, and if they want to add anything that they think is significant in their relationships with suppliers or other people they work with that they did not have a chance to talk about during the interview. Finally, tell them what you plan to do with the data and re-assure them about anonymity.

Appendix B

INTERVIEW TRANSCRIPT

FOR:	PRIVATE
PN NO:	7667
TITLE:	200810_1351
TYPE:	Interview
CONVENTION:	Verbatim, Qualitative Analysis
AUDIO LENGTH:	36 minutes
TRANSCRIBER:	EST/VR1
AT:	ESSENTIAL SECRETARY LTD
COMPLETION DATE:	11.08.2020

TRANSCRIBER'S NOTES:

Any difficulties experienced, accents and general comments

NUMBER OF UNCLEARS	1	NUMBER OF IN AUDIBLES	0
SPELL CHECK PERFORMED	Yes	PROOFING PERFORMED	Yes
AUDIO QUALITY	Excellent		
SPEAKER RELATED ISSUES	None		
EQUIPMENT RELATED ISSUES	None		
TERMINOLOGY ISSUES	None		
OTHER COMMENTS	None		

Please find attached your completed transcript.

Whilst every effort is made to ensure that the attached transcript is an accurate record of your audio recording, sometimes difficulties are encountered in understanding technical words, people speaking with a foreign accent and in some cases when somebody is speaking from a crowded room with a lot of background noise and from mobile phones.
Where we have had difficulty understanding words we have indicated this as [unclear] with the appropriate time stamp, or simply attempted to spell the word phonetically but followed it with [ph].

[Start of recording]

INT: Okay then, are you ready?

RES: I am all ready.

INT: (Laughs) Thank you, erm so the, the first question is erm how would you describe the industry that, that you work, you're working in at the moment? What are the, what are the key err challenges?

RES: Erm, at the moment we've erm been hit very hard with the erm COVID-219 situation and being in sort of err aviation, our orders have erm sort of dropped by half and obviously at this moment in time we don't know where that's going to go. So erm, yeah, the industry's been hit very hard by that. Erm, so yeah, we've had a lot of erm time reducing demand with our suppliers cancelling and deferring orders so it has bene a difficult time within the industry. I mean at the moment, but it has opened up opportunities for us to look at different types of erm technology to try and open up the market again to make people secure or feel secure in erm travelling by air.

INT: And what about Brexit, have you seen any impact there?

RES: Brexit had, no, we didn't really have any impact from Brexit. Although we're based in the UK, we work for an American company and also our manufacturing is completed in the erm Far East so we didn't, we don't have any materials really coming into the UK so we haven't noticed – we didn't notice any real impact from Brexit.

INT: So how are you personally engaged in the industry, erm sort of what projects are you working on at the moment?

RES: Okay at the moment I work in erm supply chain as a strategic buyer, but I am erm managing the relationships with suppliers in various commodities at the moment. I buy parts for aircraft galleys.

INT: What's your goal in doing this work?

RES: Erm, well the main goal has been, it's quite a relatively new project so the goal had been really to get parts in time was our biggest goal and that has been quite challenging. But obviously the standard thing of costs down at the moment we're erm looking at a lot of our supplier erm sort of portfolios to see differences in pricing that have erm, have arisen really because of erm the speed we needed to get parts in, things weren't perhaps done as well as they could, with speed being the criteria at the time. Erm so it's to really get everything interlined to be working on our contracts with suppliers.

INT: So, we'll come on to talk a little bit about suppliers erm in part 3.

RES: Okay.

INT: Is it possible you could tell me a little bit about your company at all and what, what do you like and what motivates you to do your job?

RES: Erm …

INT: You say you work in the aerospace?

RES: Yeah, yes erm I work for erm the largest erm sort of aerospace company in the world that doesn't actually make aircraft.

INT: Okay.

RES: So, it's a huge company where obviously there are thousands of people working for the company. Erm, although you know obviously you feel that erm when you're at work you just really work within erm sort of the site you're at, that obviously we have contact with our corporate team in America and our manufacturing facility that's in the Far East. Erm, it's erred, it's a good, quite a good company to work for, it's been interesting to work on erm the new projects, erm a new design that's been erm sort of moving forward. And this position actually has given me a lot of different demands from any other job I've worked on. Although the demands are similar, the criteria in aerospace are much stricter so it's erm, you work to a lot tighter processes that I would have done in any other previous job that I've had. That's been quite interesting to get involved in those and understand the reasons behind that.

INT: Do you have to work closely with people like from the technical sort of areas of the business then?

RES: Yeah, we work closely with erm the engineers, erm, the design engineers, the [unclear: 0:05:26.7] engineers, obviously quality as well because quality is erm absolute key, always is in purchasing but erm, in aerospace. You know if you have a fault part then the plane can fall out of the sky, if you're only building vacuum cleaners, it just might not work.

INT: (Laughs). So how would, how do you evaluate your work?

RES: Erm, how do I evaluate my work?

INT: Do you have like erm, do you have like a err, like some sort of assessment each year, you know.

RES: Oh yes, we have quarterly sort of performance reviews …

INT: Oh blimey.

RES: … which they are quarterly throughout the year sort of culminating in one, the whole year annual review but it is reviewed throughout the year every quarter, your performance. We have targets to meet within that and also a half of that is also on how you – I can't think of the word, but things, how you've worked – to give example of how you've worked as a team perhaps how you've collaborated in projects, outside the remit of key targets which change each year based on the erm, you know the company overall targets for that year. But obviously it's more on your performance as a person and your qualities and how you can demonstrate erm how you're using those qualities.

INT: Blimey, that's different, isn't it?

RES: It's very, it's good though.

INT: Yes, so that makes …

RES: It's quite hard to blow your own trumpet though, that's the only thing.

INT: Okay (laughs).

RES: It's the part to measurer your performance as in have you met erm targets that are measurable is easy.

INT: Yeah.

RES: But to actually, well for me anyway to say how I do at my job or why I am good I find difficult.

INT: Yeah.

RES: So, it's good that its quarterly so you also forget things to. You know if it was to go to the end of the year, I would never remember some things I've done because you take them just as part of your job as everyday life you don't really think of them being anything special.

INT: Yeah, do they get feed … you know the people you work with then; do they get feedback from them as well or like to assess you, do they ask you know Joe in the technical area his opinion of you as well?

RES: Erm, I don't know that they ask people personally but they tend to get feedback, erm sort of generally within the company. Erm it's a company where (sighs) you have to copy so many people on various emails, you know it's quite easy for sort of the management or your immediate manager who is often copied on emails and knows what you're doing to assess how people have viewed you. And we also have an erm, a system within the company where you can be put forward by other members of staff for a Star Award, that you've been particularly helpful or you've coped with something very well or they say you've gone that extra mile. Then they can put you forward for that.

INT: Oh, that's good, isn't it?

RES: It is, yeah.

INT: Do you get money for that do you or …?

RES: Yeah, we do, it's only a small amount but that's not the point, it's just to be recognised really.

INT: Yes, no I …

RES: I know the first time I had one I was just pleased someone thought I was doing well and it was a real bonus when I found out I'd got a little extra as well (laughs).

INT: Yeah, no they're really good I think those, yeah, yeah. Is there anything that stands out, that's significant since you started there, is there something that you know you think stands out for you? It's not always the case but …

RES: In what respect?

INT: You know anything that erm, since you've started working there is there anything you may achieved that is significant at all or what, what you feel you know erm, you know stands out that you've achieved?

RES: Erm, yeah sort of, yeah, I'm quite pleased with how I've worked with a couple of our suppliers, particularly difficult who also know that erm, well one of them we have no choice as to go to them and they are a very, very large company. So, to erm, to get the best out of them it's quite good because they know we have nowhere else to go… And err, I've been working with them probably for the three years, the first two years it's been very hard work and we've had to put lots of erm things in place to erm try to get them to achieve on-time delivery and to defer erm price increases. But for the last, err, probably now 10 months gong on a year we've had 100% on-time delivery every month and when I review that as part of our corporate team, because being a large company there's other divisions of our company that are using our supplier – I think there's only one other company that's got, has managed to get them to perform so well. But I would say that they are performing at their best for us. So, I feel that erm I've achieved quite a lot there in managing to erm improve their on-time delivery. It doesn't sound a lot but it has been a lot of hard work, a lot of constant battling and keeping on top of them and visiting them and working with them and finding – and building the relationship up too, to achieve that.

INT: Very good, err …

RES: Yes, and that's been noticed you know at quite a high level so that's erm, that's quite nice too.

INT: Yes, very good indeed, very good. Erm have you, have you got any other err relationships with suppliers that you could highlight at all and you know any other, like important relationships you have? I mean it's probably easiest to give …

RES: All our suppliers are important.

INT: Okay (laughs) very …

RES: All the relationships are, doesn't matter what size the company is because if they erm, if that relationship breaks down and we're left without product then erm then we're not in a good place. It's erm, being aerospace, we can't just go down the road and think oh I'll just start with another supplier. In other jobs that I've worked in, you know if you were buying sheet metal you could go to, you know a huge number of different suppliers and you could swap – okay I am not saying it will necessarily be easy to swap but you can swap. But with aerospace it's erm, the hoops you have to jump through are much more intense to get a supplier onto the approved supply list and it takes a considerable time and even the quality with inspection, ensuring they can meet all the quality criteria. It's not easy, if it's a common item that can readily be bought elsewhere, it is quite a lengthy process to change suppliers.

INT: Have you had any relationships with suppliers that have broken down at all?

RES: Erm not in this job but I have done in the past.

INT: What's happened in the past (laughs)?

RES: How we err, (pause) it wasn't that erm we did anything to upset them, or vice versa but we were, I was in a situation, quite a small company and possibly not the most professional company in the world or forward thinking but they decided at very short notice that they were now going to outsource all their sheet metal work and probably sell the machines.

INT: Oh blimey.

RES: Yeah, it was a bit like that. We found, I found another company to use that was local to us, erm they met all our criteria, the price was good, we felt they did, they produced good quality, they had one of our sheet metal workers working there so we felt that they would know our product as well. Unfortunately, having gone through all the pricing it was quite a complicated machine they were making for us. They decided that they'd got some extra business from another source that was obviously easier to do and would be more, give them better revenue flow. And so, they just said sorry we're not going to do it anymore, or we don't want to know and at that point we'd already got the orders on for production. So yes, that relationship broke down.

INT: Oh (laughs).

RES: Quite quickly (laughs).

INT: Yes, that doesn't sound so good, does it?

RES: It wasn't good, no it wasn't good at all, it was a very stressful time trying to find another supplier to sort of intervene quickly. But erm yeah, I got round it but erm, yeah, I think that's probably the only time that I've had a relationship totally break down that they just stopped supplying. Erm in the position I'm in at the moment we've had a few that we have had to pull back from the brink that haven't necessarily wanted to erm to work with us any longer because the erm, the demands were very demanding at times. Erm and perhaps, not through any fault of the buyers prior to myself but what we had asked them to do, we'd asked them to make a few parts in large quantities, turned out to be a large number of parts in small quantities which is completely different entity erm sort of pricing wise and you expect to be taken on and had to work, keeping those suppliers on board and smoothing the waters, but we didn't actually lose those, they did stay with us.

INT: Oh good, erm, so how would you interpret collaboration with a supplier then, how would you describe that, the word collaboration?

RES: Collaboration with a supplier, I see it myself as working with them to erm, for them to be able to come to us with suggestions perhaps on design, where if we were to change a design slightly it could be more cost effective to make, it could be a better quality but in turn I try to help. Our supplier has been able to work with, they need full costs, erm you know any extra information I can give them that makes it easier to predict what's going to happen. You know even, just keeping in contact with them to try to help them to be able to do the best job they can.

INT: So, you think the personal relationship then is very important?

RES: To me it is, yeah, it is if you want, in my opinion to erm have a long-term relationship with a supplier where they're going to work for you for your benefit as well, I think it's very important to have that relationship. It's much harder to erm, to say no to someone who has tried to help you in the past, who you've worked closely with and understand your business than it is to say to someone that hasn't built up that relationship and just uses you and cracks the whip. You know it's much harder for a supplier to say to someone they respect, no, or no sorry I am not willing to help. So, in the overall terms it definitely makes for a better relationship erm and security to supply a product, which is what the supply chain is for.

INT: So, you talk about this long-term relationship, what is your interpretation of loyalty?

RES: Erm, I mean I would be loyal to suppliers erm in the respect of I have moved suppliers with me from job to job if I've known that they have given me a good service. Erm be that cost or on-time delivery or quality. Erm, and in turn they help, again they help me out in a difficult situation if I have to go and say to them, we mucked up, we haven't ordered in time, can you help us then they tend to be on side more. So definitely to be loyal to your suppliers and I feel to treat them with respect, you know we've gone through all this awful situation at the moment with COVID and it hasn't been easy to phone up suppliers and have to cancel hundreds of thousands of pounds of orders that you know is going to have severe impact on some of them. But it's only fair to at least erm keep them in the picture and to be loyal to them with, as I would consider you should be to a person, to keep them, you know to keep them in the loop and be open and honest with them. You can't tell them everything but you can tell them a lot and can help them sort of, you know see how their future looks as well.

INT: That's a very good answer actually, it's probably one of the best answers I've had (laughs).

RES: (Laughs).

INT: Yes, I mean you're describing it more as a, you know how you would describe a normal relationship with a person aren't you, you know …

RES: Yes, that sums it up very well.

INT: Yes.

RES: It's not to say let them walk all over you but then, but yeah, at the end of the day that's how I see it really.

INT: Yes, you're describing it is, you know you have a close relationship with somebody, a royal relationship and it's how you would treat them, you know err as you say, the word you used was respect didn't you?

RES: Yeah, yeah, sometimes I would erm, especially in this day and age when people use erm email so much, I still often pick up the phone. If it's something I know they don't really want to hear, however difficult it is to say, because it's not easy, I don't want to give them bad news either. It's not what I like doing but I think if you can pick up the phone and actually tell them because you can't always visit them if they're on the other side of the world but at least pick up the phone because it comes across so much nicer if you can actually talk to them about it.

INT: Yes, do you think these loyal relationships do result in like, erm you know further orders and erm you know recommendations and things like that?

RES: Yeah, yes yeah, yeah definitely, yeah, I mean I wouldn't err, you do, especially as you get a network of buyers that you know erm yeah there are certain suppliers that have been loyal, have helped me and you know we've worked well together that I would recommend and there's others that are incredibly difficult erm to work with, very erm, I don't know what's the word, erm belligerent.

INT: Yes, yes.

RES: Erm that certainly you wouldn't recommend, you might even do the opposite.

INT: Yes, exactly.

RES: If someone said have you come across x company and you said yes but I'd look, you know give them a wide berth if I was you. Or you know warn them of pitfalls.

INT: Yes, yes, it's a really thoughtful answer that is, I say it's probably the best answer I've had. So erm, very good, very good thank you. Erm so taking all those things into account, how do you think suppliers add value to your, your organisation? I know you've mentioned some of the points like delivery, price and quality, erm err is there any other things you think they add value?

RES: Yes, they can easily add value in erm, of design work, that can be a big one. I've just worked on erm, on a project erm without saying too much …

INT: Yeah, it's alright, yes, yeah.

RES: … but we had, we bought, what did we buy? We bought one part from them and that was used in conjunction with another part but they've managed to design that all into their one product now so that has reduced erm, reduced cost foremost, it's also reduced the weight of the item which in air craft is critical, it's also reduced the number of erm the ease of installation and the sort of system that works behind that we've been able to also sort of eliminate or simplify that as well. So, there's not just cost savings on the actual product we bought but also on labour savings as well. By justification. And that's come about through just erm, yeah working with them and them knowing what we do and coming up with a suggestion that was good.

INT: Yeah, so like erm, know-how, that's, that's quite – it seems to be quite important in the industry that you work in that the suppliers are coming in with their own know-how or, or design experience and that helps to reduce, reduce cost.

RES: That's it. And it can improve quality as well.

INT: Yes, yes of course.

RES: I think you know looking back to the outsource days when we did the outsourcing of that little probe that had been made in-house for years and we used to have problems with it. And we outsourced that and that was purely just going round the factory and sort of talking to them, seeing what they did and thinking oh they might be able to help us and them going oh we might be able to help you.

INT: Yes.

RES: And them coming up with an idea that's not only cost savings but improved our quality as well and reliability. So yeah, that is err …

INT: Yes, I've tended to notice that on erm, more companies like yourself, that you work in that the fact that this supplier know-how is, is quite important.

RES: Yeah, I think it is, yeah that's come up probably in the last, certainly 3 of the manufacturing roles I was in, it doesn't tend to come up so much in – although saying that, even going back to erm back to the days when I worked in fashion long, long ago, and buying packaging and the carrier bags. You know they could suggest, actually if you changed the design of that cardboard, if you had the different corrugation, you can then cut your costs without cutting the strength of the box, because of their knowledge on packaging. So, it applies in lots of different fields but certainly manufacturing really lends itself to it.

INT: Yes, yes, and you also think that erm these like very personal relationships as well, you've mentioned that a few times are very important.

RES: Mumm, and I think even that adds value even in the design process because I think if you have a good relationship, they feel that they can, are more able to ask you or suggest things and if you've got a good relationship, you're more willing to listen to them as well. Whereas if you just treat them as one-stop shops the relationship isn't there, that trust isn't there that they could actually help you. You feel in a way they may feel that they are just trying to make extra profits in themselves which of course they do, that's their win on the situation. But it doesn't mean both parties can't win.

INT: Yes, oh no that's, that's again a very good answer. I think you've; I think we've sort of covered the how you think suppliers add value, you've covered that very well indeed. I think probably the next question is, is, has anybody shaped your work with suppliers at all in your career?

RES: Not a huge number of people, erm I would say probably from the days when – am I allowed to say names?

INT: Yes, yes.

RES: Okay, yes when I worked with Steve Topp, that was erm, quite a few years ago now but he very much took that attitude of relationships and talking to people and the attitude of not beating your suppliers with a stick and trying to sort of work with them and that collaboration type of purchasing. That may have been that was just erm the way the company worked but for me it came directly through him. And sometimes, yes, some companies won't let people but that's where I feel that I probably learnt those sorts of strategies in the first place.

INT: Yeah, and I think that's probably a bit more like you as well to be fair, yeah, I think you may, I think you may be more that type of person, err more considerate and you know …

RES: Yes, I couldn't work for a company where keeping shut, I won't do that because I don't think that's right.

INT: Yes, exactly.

RES: There are times when you have to say …

INT: Yes, of course, of course you know.

RES: … but not always at all. You can't threaten suppliers, it just doesn't work because at the end of the day it comes back at you.

INT: Yes, I understand. So, thank you very much for that, we are just going to talk about the final erm area which is erm unusual err it's how you felt when working with suppliers and what I am trying to understand here is, is there anything, any activity that's made you feel proud or happy err when working with err, with suppliers? You know have you done something that's really made you feel this way?

RES: Erm, yeah, I mean I probably felt most emotions with my suppliers (laughter).

INT: Could you highlight that, tell me more about that? (Laughter). Whatever you want to say?

RES: No, it's fine, I mean yeah, my work makes me feel proud if I am successful in it. Erm I've just said about the supplier that would turn round on delivery; I feel quite proud about that if I mentioned it. Erm, yeah just err, working with most of my suppliers has made me feel proud and happy. When you achieve something or when it is just, it's changed sort of the way, not the business works but what the business can achieve and that it's come through my endeavours has made a difference.

INT: Yes, yes.

RES: And obviously that comes because of the nature of my job, through working with my suppliers. Erm, you know even if it's just down to the degree that erm they won't do something for someone else but I ask them and they go oh yeah, I'll do it for you. That makes me happy and smug. (Laughs). But yeah, I mean it can be very frustrating as well.

INT: Yes, of course.

RES: Sometimes I can be nearly be at twos with them.

INT: Yes, yes.

RES: But erm yeah, probably when a project that you've worked with a supplier has come out, you know and you've got the right end results and you've put a lot of effort and time into it and then you've got something to show at the end of it and you feel proud and happy.

INT: Yes, and particularly if you recognise, being also recognised for it as well.

RES: Absolutely, yes.

INT: So, on the other end of the scale, is there anything that's got you frustrated or upset or angry when working with suppliers?

RES: Erm (pause)

INT: That you can share (laughs).

RES: What we can share, yeah (laughter).

INT: Or that you're prepared to share.

RES: I can't think …

INT: No.

RES: I really can't think of anything, there are things that get you frustrated and upset, erm you know I've been upset or frustrated, both emotions can be very close, all those are very close, when you do get a supplier that's erm and ironically that has been as I say working with the supplier that's now doing on-time delivery …

INT: Yeah, yeah.

RES: … a lot of those frustrations and anger have been there in the rollercoaster of getting to that end result because we'd have instances when they'd be going yeah, yeah, we're going to be on time, you'd gone to every single order on the page, yeah that's going to be fine, this is going to happen, that's going to happen and then it doesn't and I've already reported back it looks like they're going to be good this month. Yeah, I think that's what really makes me frustrated and false promises from suppliers. Even if they haven't intentionally done them or you know given you that information wrongly, it is very frustrating.

INT: Yeah, and then it looks, it makes you …

RES: It reflects badly on us.

INT: Yeah, it makes you look like you know a bad reflection, doesn't it?

RES: Yeah, it does, yeah. But obviously most of the times when you're angry and that, as in all of life you just put it behind you and carry on.

INT: Yes, okay, it's a very, very pragmatic approach.

RES: Yes (laughs).

INT: Erm so that's really the sort of erm final sort of question, erm so if there's anything else you'd like to say erm obviously you know you can do now. But I just want to thank you very much for taking part in the interview and erm you know, err, some of the answers you've given have been really, really interesting and really good responses so thank you very much.

RES: I hope it's been useful to you, always useful to you, obviously if you need any more information and I can come up with other examples if you need them, just give me a shout.

INT: I will do, I say I just reassure you that everything is confidential so yeah.

RES: Yes, good.

INT: You know any business wouldn't let me do it otherwise, they are very strong on their ethical approvals and everything so …

RES: Good.

INT: Okay Linda, well thank you very much for your time anyway and putting …

RES: You're welcome.

INT: … and putting yourself out, I hope we can stay in touch.

RES: Yes, let me know how it goes.

INT: Yes, okay then, okay.

RES: I am sorry it took me quite so long to get back to you.

INT: No, I know people are very, very busy and, but thank you for coming back to me anyway.

RES: Ah you're welcome.

INT: Okay then, well take care of yourself.

RES: Okay.

INT: Okay, thank you very much.

RES: Take care.

INT: And you.

RES: Bye.

INT: Bye-bye.

[End of Recording]

Appendix C

Research information for participants of survey questionnaires

This research project investigates the factors driving customer loyalty in UK manufacturing firms and seeks to understand the experiences of practitioners in the manufacturing industry. The research forms part of a DBA academic qualification at Henley Business School at the University of Reading.

You have been approached because you have experience of buyer-supplier relationships at a senior level in the UK manufacturing industry. Your participation is entirely voluntary and you are free to withdraw from the study at any time. I would be very grateful if you would agree to take part by completing this questionnaire via interview of about 20 minutes.

Responses are anonymous and individual respondents will not be identified by name or organisation in the final report. The data will be kept securely and either destroyed after the completion of the project or retained securely for inclusion in publications directly related to this research subject to participants consent to do so.

This project has been subject to ethical review in accordance with the procedures specified by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.

By completing the questionnaire, it will be understood that you are aged 18 or over and that you give consent for your responses to be used for the purposes of this research project.

A copy of the completed summary of findings will be available on request.

Many thanks for your support.

Perry Shead

Researcher, Henley Business School

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Appendix D

Customer Loyalty Nodes - Phase 5 - Defining and Naming Themes (Data Reduction - Consolidation)

Phase 5 – Thematic Analysis Defined and Named Themes	Code Definitions for Coding Consistency (Rules for Inclusion)	Interviews Coded	Units of Meaning Coded
T1 - Functional Value		10	235
T1.1 - Product Quality		10	56
Product Quality	References to the importance of supplier's product quality as a source of added value to the supply chain	10	56
T1.2 - Delivery Performance		10	40
Delivery Performance	References to the importance of supplier's delivery performance as a source of added value to the supply chain	10	40

Phase 5 – Thematic Analysis Defined and Named Themes	Code Definitions for Coding Consistency (Rules for Inclusion)	Interviews Coded	Units of Meaning Coded
T1.3 - Cost		10	94
Driving Down Cost	References to participants and their perceptions of their role being cost driven	10	94
T1.4 - Know How		10	45
Supplier Know How	References to the importance of supplier's know how as a source of added value to the supply chain	10	45
T2 - Social Value		9	19
T2.1 - Reputation		8	10

Phase 5 – Thematic Analysis Defined and Named Themes	Code Definitions for Coding Consistency (Rules for Inclusion)	Interviews Coded	Units of Meaning Coded
Reputation	References to the importance of supplier’s reputation as a source of added value to the supply chain	8	10
T2.2 - Image		6	9
Supplier Image	References to the importance of supplier’s image as a source of added value to the supply chain	6	9
T3 - Emotional Value		10	330
T3.1 - Interpersonal Relationships		10	291
T3.1.1 - Collaboration		10	188

Phase 5 – Thematic Analysis Defined and Named Themes	Code Definitions for Coding Consistency (Rules for Inclusion)	Interviews Coded	Units of Meaning Coded
Collaborative in Nature	Participants who describe the human aspects of relationship building as important step to engaging with suppliers	10	188
T3.1.2 - Communications		10	103
Communications Dependent	References to the importance of communications to and from suppliers to the relationship with the supplier	10	103
T3.2 - Frustration		10	27
Frustration	References to frustration as a component of supplier relationships	10	27
T3.3 - Human Touch		6	12

Phase 5 – Thematic Analysis Defined and Named Themes	Code Definitions for Coding Consistency (Rules for Inclusion)	Interviews Coded	Units of Meaning Coded
Human Touch	References to the human touch as being an important emotional aspect in supplier relationships	6	12
T4 - Buyer Satisfaction	References to an affective evaluative response to a product or service experience	7	20
T5 - Behavioural Loyalty	References to the customer’s willingness to repurchase the product and to continue a relationship with the supplier	10	37
T6 - Attitudinal Loyalty	References to the level of the customer’s psychological attachments and attitudinal advocacy vis-à-vis the supplier	7	13
T7 - Duration of the Relationship		9	30
T7.1 - Time as a Component in Supplier Relations	References to the time it takes to build strong supplier relations	9	30

Appendix E

Fit indices for the specification of structural equation models

Category	Fit Index	Threshold Level	Description
Absolute	χ^2 Statistic	The smaller the χ^2, the better the model-data fit. Influenced by the model's degrees of freedom (DF); applicable for N in value of range of [100; 200].	Key Value to assess the GOF of any SEM. Its value increases as sample size (N) increases et vice versa.
	Relative χ^2 (χ^2/DF) CMIN (AMOS)	2:1 or 3:1 CMIN/DF ≤ 3 is acceptable.	Adjusts for sample size. Considers Degrees of Freedom
	Root Mean Square Residual (RMR)	RMR < .08 indicates good fit.	The average squared differences between the residuals of the sample covariance matrix and the hypo-thesised covariance model.
	Standardized Root Mean Square Residual (SRMR)	Value range 0 ≤ SRMR ≤ 1 SRMR < .05 indicates good fit. SRMR < .08 indicates acceptable fit.	Standardized version of RMR which is easier to interpret.
	Root Mean Square Error of Approximation (RMSEA)	95% confidence interval RMSEA ≤ .03 indicates excellent fit. RMSEA ≤ .06 indicates good fit. RMSEA > .10 is not suitable. Only applicable for N > 100	How well the model with unknown but optimally chosen estimates would fit the population covariance matrix. Adjusted χ^2 Statistic
	Goodness-of-Fit (GFI)	GFI > .95 indicates good fit. Value range 0 ≤ GFI ≤ 1 Has no absolute cut-off.	Higher Values indicate better fit. Statistic should be used with caution because of sample size sensitivity.
Parsimony	Adjusted Goodness-of-Fit (AGFI)	GFI > .95 good fit Value range 0 ≤ GFI ≤ 1 Has no absolute cut-off.	Adjusts GFI based on the number of model parameters.
Incremental	Normed Fit Index (NFI)	0 ≤ NFI ≤ 1 NFI ≥ .95 indicates good fit. NFI = 1 represents perfect fit. Only applicable for sample N > 100 Has no absolute cut-off.	Considers sample size. Is the ratio of the difference in the χ^2 value for the fitted model and a null model divided by the χ^2 value for the null model Tends to underestimate model fit with smaller sample sizes.
	Comparative Fit Index (CFI)	0 ≤ CFI ≤ 1 CFI ≥ .95 represents good fit. Has no absolute cut-off.	Considers sample size.

Source: Adapted from Hair et al. (2010) and Kline (2015).

Appendix F

Research survey questions

Q	Construct	Indicator	Statement
			Section Zero - Screeners
Sa	Decision making		Which of the following best describes your involvement with purchasing products, and dealing with external suppliers? PROMPT, SINGLE CODE
			I am a decision maker on suppliers we use and products we purchase
			I am involved in decisions on suppliers we use and products we purchase, but I don't make the final decision
			I am not involved in this ASK FOR REFERRAL AND THEN SCREEN OUT
			Section One - Background **Thinking about your organisation and your role within that organisation**
1a	Hierarchical position		Which of the following categories best describes your position in your organisation? PROMPT, SINGLE CODE
			Director/CEO
			Senior Management
			Middle Management
			Department Member
1b	Job role		What is your job role? DO NOT PROMPT, SINGLE CODE
			Purchasing Manager
			Buyer
			Supply Chain Manager
			Procurement Manager
			Purchasing Director
			Contracts Manager
			Supply Chain Director
			Senior Buyer
			Head of Procurement
			Head of Purchasing
			Contracts Director
			Purchasing Assistant
			Commodity Manager
			Procurement Director
			Director
			Managing Director
			Other SPECIFY
2	Firm size by employee numbers		What is the approximate number of full-time employees in your organisation in the UK? PROMPT, SINGLE CODE
			Less than 50
			Between 51-500
			Greater than 500

Q	Construct	Indicator	Statement
			Section One - Background **Thinking about your organisation and your role within that organisation**
3	**Industry classification**		**What manufacturing industry is your organisation principally engaged? DO NOT PROMPT, SINGLE CODE**
			Aerospace
			Agricultural
			Chemicals
			Construction
			Electrical equipment
			Electronics
			Food and drink
			Furiniture
			Glass
			Machinery
			Metals
			Non-metallic minerals
			Paper and wood
			Pharmaceuticals
			Plastics
			Rubber
			Textiles and garments
			Tobacco
			Transport
			Other manufacturing
4	**Customer relationship duration**		**I'd now like you to think about your main supplier which has been supplying products to your company. This can be in any area. What is the length of time the main supplier has been supplying to your company? Please state in years and months**
			[ ] Years
			[ ] Months
5	**Work duration**		**What is the length of time you have worked for your company? Please state in years and months**
			[ ] Years
			[ ] Months

Q	Construct	Indicator	Statement
			Section Two - Satisfaction **Thinking about your relationship with your supplier**
6	**Customer Satisfaction**	**Customer Satisfaction**	**Considering your main supplier relationship, please indicate the degree to which you agree/disagree with the following statements. Please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			Overall, we are very satisfied with the relationship with this supplier
			Overall, this supplier is a good firm to do business with
			Overall, this supplier treats us fairly
			Section Three - Loyalty **Thinking about your relationship with your supplier**
7	**Behavioural Customer Loyalty**	**Behavioural Customer Loyalty**	**Considering your main supplier relationship, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			We consider this supplier as our first choice for this kind of product
			We are going to do more business with this supplier in the next few years
8	**Attitudinal Customer Loyalty**	**Attitudinal Customer Loyalty**	**Considering your main supplier relationship, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			I say positive things about this supplier to my colleagues in other firms
			I recommend this supplier to colleagues who seek my advice
8a	**Confirmation of second supplier**		**We'd now like to obtain feedback on your main supplier in relation to other suppliers you use. Do you use another supplier regularly, in this product area, or another?**
			Yes GO TO Q9
			No GO TO Q8b
8b	**Confirmation of other suppliers**		**OK, in that case, we'd like you to think about your main supplier in relation to how you would expect other suppliers to operate and perform.**

Q	Construct	Indicator	Statement	Statement (no second supplier)
			Section Four - Interpersonal Relationships, Frustration and Human Touch **Thinking about your relationship with your supplier**	
			ASK BELOW QUESTIONS TO THOSE WHO USE A SECOND SUPPLIER (Q8a - Yes)	**ASK BELOW QUESTIONS TO THOSE WHO DO NOT HAVE SECOND SUPPLIER (Q8a - No)**
9	**Emotional Relationship Value**	**Interpersonal Relationships**	**I'm now going to ask you to think about this supplier in relation to the second supplier your organisation uses. Considering your relationship with your supplier, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	**I'm now going to ask you to think about your main supplier in relation to how you expect other suppliers to support you. Considering your relationship with your supplier, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			Compared to the second supplier, it is easier to work with the main supplier	Compared to other suppliers, it is easier to work with the main supplier
			Compared to the second supplier, we have a better working relationship with the main supplier	Compared to other suppliers, we have a better working relationship with the main supplier
			Compared to the second supplier, there is better co-operation between the main supplier's staff and ours	Compared to other suppliers, there is better co-operation between the main supplier's staff and ours
			Compared to the second supplier, we interact better the main supplier	Compared to other suppliers, we interact better the main supplier
			Compared to the second supplier, we can address problems more easily with the main supplier	Compared to other suppliers, we can address problems more easily with the main supplier
			Compared to the second supplier, we can discuss problems more freely with the main supplier	Compared to other suppliers, we can discuss problems more freely with the main supplier
			Compared to the second supplier, the main supplier gives us a greater feeling of being treated as an important customer	Compared to other suppliers, the main supplier gives us a greater feeling of being treated as an important customer
10		**Frustration**	**Considering your relationship with your main supplier, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	
			I often get upset when I do not get what I expect from my main supplier	
			If I feel my main supplier does not care about me as a customer, this makes me angry	
			I rarely get upset when I receive bad service	
			When the product or service is not right in some way, it is not the mistakes that the main supplier makes that bother me, but how the supplier handles them with me	
11		**Human Touch (Social Interaction)**	**Considering your relationship with your main supplier, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	
			I like my main supplier to talk about private issues with me	
			I like my main supplier to try and establish a more personal relationship with me	
			My main supplier is interested in my personal situation	
			Section Five - Work Enjoyment **Thinking about your role in your organisation**	
12	**Manufacturing Industry**		**Do you enjoy working in the UK manufacturing industry? SINGLE CODE**	
			Yes	
			No	
			Section Six - Reputation and Image **Thinking about your needs from your supplier**	
13	**Social Relationship Value**	**Reputation**	**Considering your main suppliers reputation, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	
			The general credibility of our main supplier helps to improve the image of our firm	
			The general reputation of our main supplier fits with the image of our firm that we want to present	
			The relationship with our main supplier improves the social perception of our firm	
14		**Image**	**Considering your main suppliers social image, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	
			Our main supplier has a reputation for good social behaviour	
			I consider that our main supplier behaves ethically towards its customers and employees	
			Generally, I read and pay attention to all the information that our main supplier sends me	
			Our supplying firm participates actively in social events	

Q	Construct	Indicator	Statement	
			Section Seven - Price, Product Quality, Know How and Delivery Performance **Thinking about your needs from your supplier**	
			ASK BELOW QUESTIONS TO THOSE WHO USE A SECOND SUPPLIER (Q8a - Yes)	**ASK BELOW QUESTIONS TO THOSE WHO DO NOT HAVE SECOND SUPPLIER (Q8a - No)**
15	**Functional Relationship Value**	**Direct Product Cost**	**Considering your main suppliers product price, when compared to the second suppliers price... Please state on a 1-5 scale whether your main suppliers price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same.**	**Considering your main suppliers product price, when compared to your expectations of other supplier's prices... Please state on a 1-5 scale whether your main suppliers price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same.**
			[ ] 1 -5 RESPONSE	[ ] 1 -5 RESPONSE
			ASK BELOW QUESTIONS TO THOSE WHO USE A SECOND SUPPLIER (Q8a - Yes)	**ASK BELOW QUESTIONS TO THOSE WHO DO NOT HAVE SECOND SUPPLIER (Q8a - No)**
16		**Product Quality**	**Considering your main suppliers product quality, when compared to the second suppliers product quality, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	**Considering your main suppliers product quality, when compared to your expectations of other suppliers' product quality, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			Compared to the second supplier, the main supplier provides us with better product quality	Compared to other suppliers, the main supplier provides us with better product quality
			Compared to the second supplier, the main supplier meets our quality standards better	Compared to other suppliers, the main supplier meets our quality standards better
			Compared to the second supplier, the main supplier's products are more reliable	Compared to other suppliers, the main supplier's products are more reliable
			Compared to the second, we reject less products from the main supplier	Compared to other suppliers, we reject less products from the main supplier
			Compared to the second supplier, the main supplier provides us with more consistent product quality over time	Compared to other suppliers, the main supplier provides us with more consistent product quality over time
			Compared to the second supplier, we have less variations in product quality with the main supplier	Compared to other suppliers, we have less variations in product quality with the main supplier
			ASK BELOW QUESTIONS TO THOSE WHO USE A SECOND SUPPLIER (Q8a - Yes)	**ASK BELOW QUESTIONS TO THOSE WHO DO NOT HAVE SECOND SUPPLIER (Q8a - No)**
17		**Know How**	**Considering your main suppliers know how, when compared to the second suppliers know how, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	**Considering your main suppliers know how, when compared to your expectations of other suppliers' know how, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			Compared to the second supplier, the main supplier provides us with better access to its know how	Compared to other suppliers, the main supplier provides us with better access to its know how
			Compared to the second supplier, the main supplier knows better how to improve our existing products	Compared to other suppliers, the main supplier knows better how to improve our existing products
			Compared to the second supplier, the main supplier performs better at presenting us with new products	Compared to other suppliers, the main supplier performs better at presenting us with new products
			Compared to the second supplier, the main supplier knows better how to help us drive innovation in our products	Compared to other suppliers, the main supplier knows better how to help us drive innovation in our products
			Compared to the second supplier, the main supplier knows better how to assist us in new product development	Compared to other suppliers, the main supplier knows better how to assist us in new product development
			ASK BELOW QUESTIONS TO THOSE WHO USE A SECOND SUPPLIER (Q8a - Yes)	**ASK BELOW QUESTIONS TO THOSE WHO DO NOT HAVE SECOND SUPPLIER (Q8a - No)**
18		**Delivery Performance**	**Considering your main suppliers delivery performance, when compared to the second suppliers delivery performance, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**	**Considering your main suppliers delivery performance, when compared to your expectations of other suppliers' delivery performance, please indicate the degree to which you agree/disagree with the following statements. As before, please answer using a 1-7 scale where 1 means you strongly disagree with it, and 7 means you strongly agree with it. RANDOMISE ORDER PROMPTED**
			Compared to the second supplier, the main supplier performs better in meeting delivery due dates	Compared to other suppliers, the main supplier performs better in meeting delivery due dates
			Compared to the second supplier, we have less delivery errors with the main supplier	Compared to other suppliers, we have less delivery errors with the main supplier
			Compared to the second supplier, deliveries from the main supplier are more accurate (no missing or wrong parts)	Compared to other suppliers, deliveries from the main supplier are more accurate (no missing or wrong parts)
			Section Eight - Consent	
19		**Consent**	**Are you happy for your views today to be used in any academic publications, produced by the University of Reading? SINGLE CODE**	
			Yes	
			No	

Appendix G

SPSS output for social relationship value - reputation - Q13(1) in survey questionnaire

Descriptives

			Statistic	Std. Error
Considering your main suppliers reputation: The general credibility of our main supplier helps to improve the image of our firm	Mean		5.09	.119
	95% Confidence Interval for Mean	Lower Bound	4.86	
		Upper Bound	5.33	
	5% Trimmed Mean		5.21	
	Median		6.00	
	Variance		3.532	
	Std. Deviation		1.879	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		3	
	Skewness		-.874	.154
	Kurtosis		-.273	.306

Tests of Normality

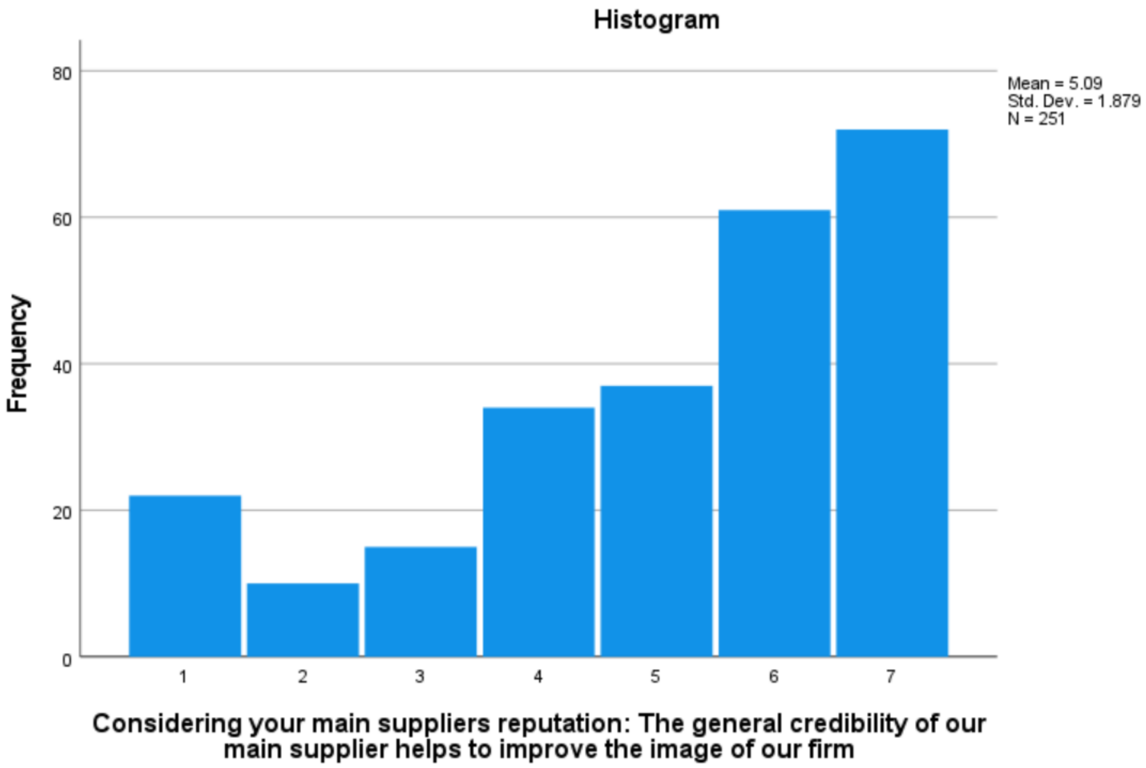
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Considering your main suppliers reputation: The general credibility of our main supplier helps to improve the image of our firm	.215	251	<.001	.855	251	<.001

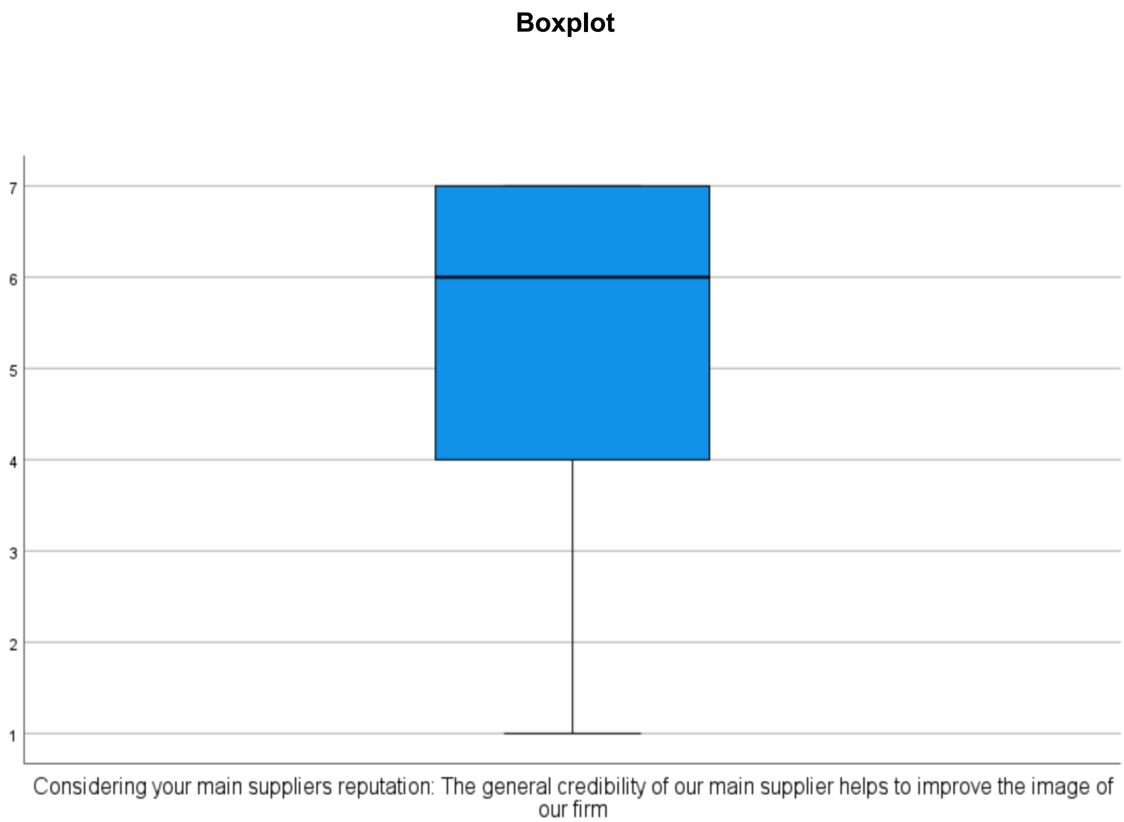
a. Lilliefors Significance Correction

Original mean = 5.09 compared to 5% trimmed mean = 5.21, indicating similar results so extreme scores have a weak influence on the original mean. In addition, the mean values are close to the results from the remaining distribution.

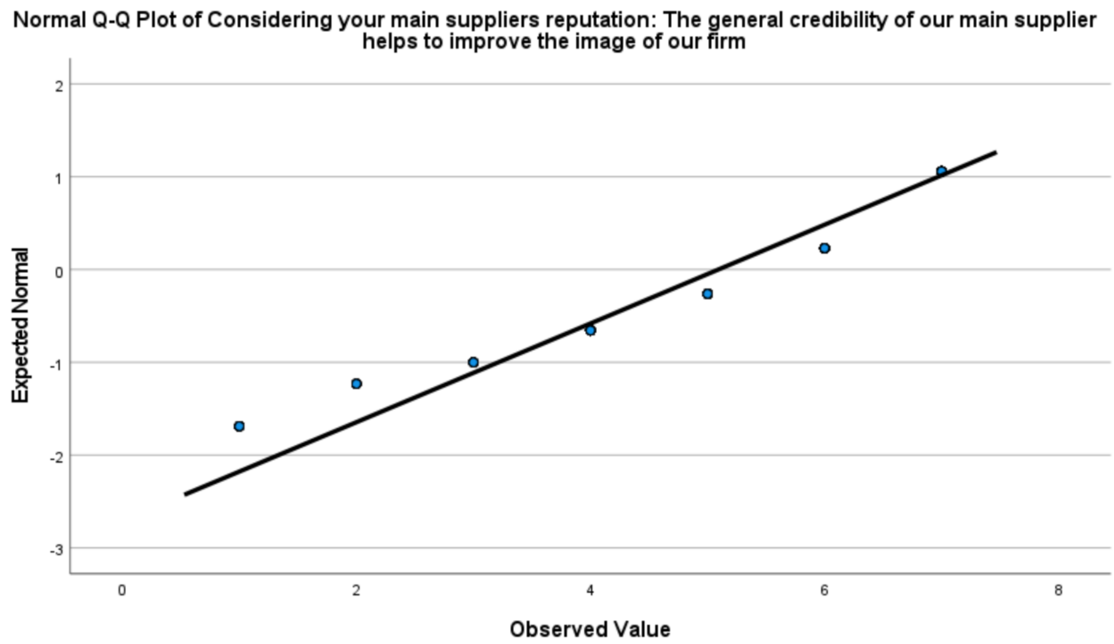
Skewness = -0.874 indicating negatively skewed data, but confirms to the general guideline that values should lie between +1 and -1 to indicate normality.

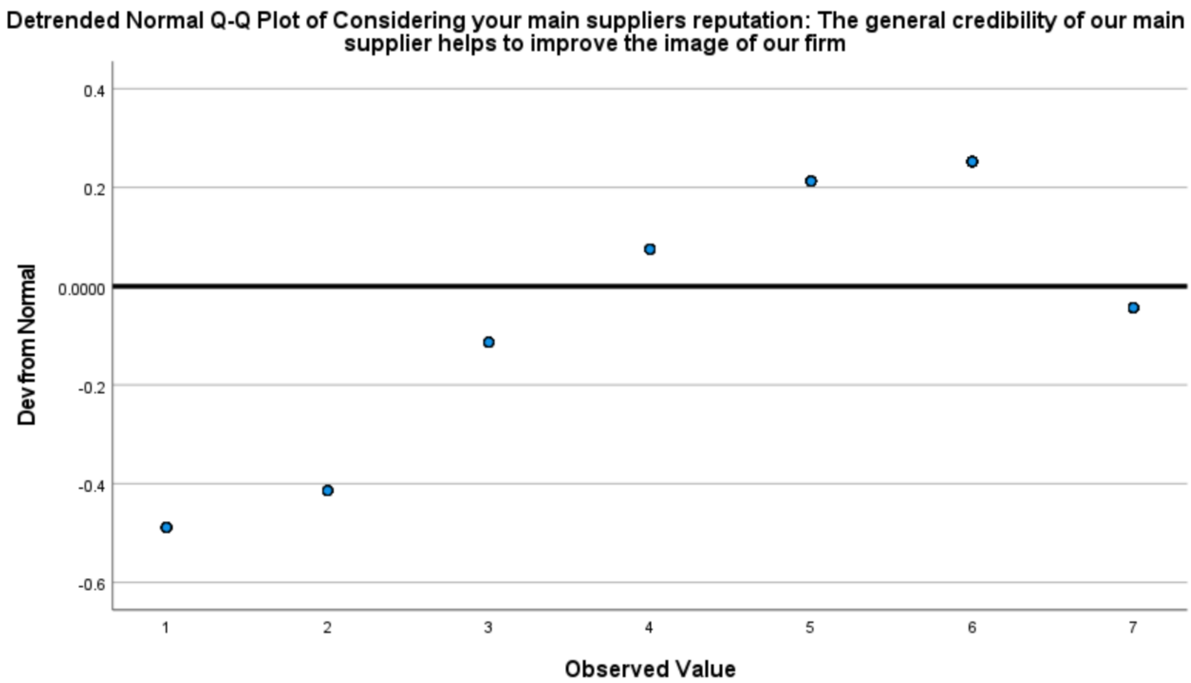
Kolmogorov-Smirnow test highlights significant value <0.001 indicating violation of the assumption of normality.





Histogram is negatively skewed and boxplot highlights there are no outliers.





Normal probability plots (labelled Normal Q-Q Plot) show the observed value for each score against the expected value from the normal distribution. A reasonably straight line suggests a normal distribution.

The Detrended Normal Q-Q Plot shows the actual deviation of the scores from the straight line.

Appendix H

Overview of the hypothesis (H) number, indicator name and reference, statement and literature source for each construct

Hypothesis	Construct	Construct name	Indicator	Indicator name	Indicator reference	Statement	Literature source
N/A	Hierarchical position				position	Which of the following categories best describes your position in your organisation?	Patterson and Spreng (1997)
N/A	Job role				job_rol	What is your job role?	Patterson and Spreng (1997)
N/A	Firm size by employee numbers				empl_no	What is the approximate number of full-time employees in your organisation in the UK?	Patterson and Spreng (1997)
N/A	Industry classification				industry	In which one of the following manufacturing industries is your organisation principally engaged?	Grayson and Ambler (1999)
H12, H13	Customer relationship duration				cudu	What is the length of time the main supplier has been supplying to your company?	Grayson and Ambler (1999)
	Work duration				wodu	What is the length of time you have worked for your company?	Grayson and Ambler (1999)
	Manufacturing industry				man_ind	Do you enjoy working in the UK manufacturing industry?	
H1, H2, H3	Functional Relationship Value	FUNC	Direct Product Cost	COST	cost_1	Considering your main suppliers product price, when compared to the second suppliers price... Please state on a 1-5 scale whether your main suppliers price is much lower (a score of 1), or much higher (a score of 5). A score of 3 would indicate it is about the same.	Ulaga and Eggert (2006a); Cater and Cater (2009)
			Product Quality	QUAL	qual_1	Compared to the second supplier, the main supplier provides us with better product quality	Ulaga and Eggert (2006a); Cater and Cater (2009)
					qual_2	Compared to the second supplier, the main supplier meets our quality standards better	Ulaga and Eggert (2006a); Cater and Cater (2009)
					qual_3	Compared to the second supplier, the main supplier's products are more reliable	Ulaga and Eggert (2006a); Cater and Cater (2009)
					qual_4	Compared to the second, we reject less products from the main supplier	Ulaga and Eggert (2006a)
					qual_5	Compared to the second supplier, the main supplier provides us with more consistent product quality over time	Ulaga and Eggert (2006a); Cater and Cater (2009)
					qual_6	Compared to the second supplier, we have less variations in product quality with the main supplier	Ulaga and Eggert (2006a)
			Know How	KNOW	know_1	Compared to the second supplier, the main supplier provides us with better access to its know how	Ulaga and Eggert (2006a); Cater and Cater (2009)
					know_2	Compared to the second supplier, the main supplier knows better how to improve our existing products	Ulaga and Eggert (2006a); Cater and Cater (2009)
					know_3	Compared to the second supplier, the main supplier performs better at presenting us with new products	Ulaga and Eggert (2006a); Cater and Cater (2009)
					know_4	Compared to the second supplier, the main supplier knows better how to help us drive innovation in our products	Ulaga and Eggert (2006a)
					know_5	Compared to the second supplier, the main supplier knows better how to assist us in new product development	Ulaga and Eggert (2006a)
			Delivery Performance	DELY	dely_1	Compared to the second supplier, the main supplier performs better in meeting delivery due dates	Ulaga and Eggert (2006a); Cater and Cater (2009)
					dely_2	Compared to the second supplier, we have less delivery errors with the main supplier	Ulaga and Eggert (2006a)
					dely_3	Compared to the second supplier, deliveries from the main supplier are more accurate (no missing or wrong parts)	Ulaga and Eggert (2006a); Cater and Cater (2009)

Hypothesis	Construct	Construct name	Indicator	Indicator name	Indicator reference	Statement	Literature source
H4, H5, H6	Social Relationship Value	SOCI	Reputation	REPU	repu_1	The general credibility of our main supplier helps to improve the image of our firm	Fiol et al. (2009, 2011)
					repu_2	The general reputation of our main supplier fits with the image of our firm that we want to present	Fiol et al. (2009, 2011)
					repu_3	The relationship with our main supplier improves the social perception of our firm	Fiol et al. (2009, 2011)
			Image	IMAG	imag_1	Our main supplier has a reputation for good social behaviour	Fiol et al. (2009, 2011)
					imag_2	I consider that our main supplier behaves ethically towards its customers and employees	Fiol et al. (2009, 2011)
					imag_3	Generally, I read and pay attention to all the information that our main supplier sends me	Fiol et al. (2009, 2011)
					imag_4	Our supplying firm participates actively in social events	Fiol et al. (2009, 2011)
H7, H8, H9	Emotional Relationship Value	EMOT	Interpersonal Relationships	INTE	inte_1	Compared to the second supplier, it is easier to work with the main supplier	Ulaga and Eggert (2006a); Cater and Cater (2009)
					inte_2	Compared to the second supplier, we have a better working relationship with the main supplier	Ulaga and Eggert (2006a); Cater and Cater (2009)
					inte_3	Compared to the second supplier, there is better co-operation between the main supplier's staff and ours	Ulaga and Eggert (2006a); Cater and Cater (2009)
					inte_4	Compared to the second supplier, we interact better the main supplier	Ulaga and Eggert (2006a)
					inte_5	Compared to the second supplier, we can address problems more easily with the main supplier	Ulaga and Eggert (2006a)
					inte_6	Compared to the second supplier, we can discuss problems more freely with the main supplier	Ulaga and Eggert (2006a)
					inte_7	Compared to the second supplier, the main supplier gives us a greater feeling of being treated as an important customer	Ulaga and Eggert (2006a)
			Frustration	FRUS	frus_1	I often get upset when I do not get what I expect from my main supplier	Susskind (2004)
					frus_2	If I feel my main supplier does not care about me as a customer, this makes me angry	Susskind (2004)
					frus_3	I rarely get upset when I receive bad service	Susskind (2004)
					frus_4	When the product or service is not right in some way, it is not the mistakes that the main supplier makes that bother me, but how the supplier handles them with me	Susskind (2004)
			Human Touch	HUMT	humt_1	I like my main supplier to talk about private issues with me	Ruiz-Martinez et al. (2019)
					humt_2	I like my main supplier to try and establish a more personal relationship with me	Ruiz-Martinez et al. (2019)
					humt_3	My main supplier is interested in my personal situation	Ruiz-Martinez et al. (2019)
H10, H11	Customer Satisfaction	CUSA	Customer Satisfaction	CUSA	cusa_1	Overall, we are very satisfied with the relationship with this supplier	Lam et al. (2004); Cater and Cater (2009)
					cusa_2	Overall, this supplier is a good firm to do business with	Lam et al. (2004); Cater and Cater (2009)
					cusa_3	Overall, this supplier treats us fairly	Lam et al. (2004); Cater and Cater (2009)
	Behavioural Customer Loyalty		Behavioural Customer Loyalty	BELO	belo_1	We consider this supplier as our first choice for this kind of product	Lam et al. (2004); Cater and Cater (2009)
					belo_2	We are going to do more business with this supplier in the next few years	Lam et al. (2004); Cater and Cater (2009)
	Attitudinal Customer Loyalty		Attitudinal Customer Loyalty	ATLO	atlo_1	I say positive things about this supplier to my colleagues in other firms	Lam et al. (2004); Cater and Cater (2009)
					atlo_2	I recommend this supplier to colleagues who seek my advice	Lam et al. (2004); Cater and Cater (2009)

Glossary

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Index