
Trust, commitment and business expansion in automotive supply chains in a developing country: a principal-agency perspective

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Abstract: The automotive industry is important for sustaining developing countries' economies. Literature states the South African automotive buyer-seller relationships are hampered by conflict where both parties reveal self-serving behaviour. This results in a decrease of trust and commitment, and increased supply chain uncertainty that is hampering business expansion. Hence, this study aimed to investigate the relationships between trust, commitment and business expansion through buyer-seller relationships. A quantitative study was conducted through a structured close-ended questionnaire among 114 managers from automotive component manufacturers. The empirical research found a strong presence of trust and commitment in automotive buyer-seller relationships. The influence of trust and commitment on possible business expansion was determined through a regression-based analysis. Findings revealed trust in a seller (agent) results in business expansion and commitment to a seller acts as a mediator between trust and business expansion. Action plans for both agents and principals (buyers) are recommended to sustain business.

Keywords: automotive industry; supply chains; supply chain relationships; supply chain risk; social exchange theory; agency theory; trust; commitment; business expansion; South Africa; developing countries.

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1 Introduction

Supply chain buyer-seller relationships fall under the social exchange theory and are usually characterised by a long-term orientation [Herko and Hanna, (2017), p.87]. According to the social exchange theory, the business relationship is characterised by rational decision making and implies a two-sided, mutually contingent and rewarding process involving transactions or simply exchange. It is posited on the concept of individuals or groups interacting due to the expectation of rewards and the avoidance of penalties or punishment (Ambrose et al., 2010).

Although supply chain management theory promotes positive cooperative relationships between buyers and sellers (or suppliers) in accordance with the social exchange theory, the opposite often applies, even in automotive supply chains, where the relationship can be characterised by conflicting objectives and self-serving behaviour resulting in elevated risk for both parties [Maile, 2008; Naudé et al., (2013), p.1; Sharma and Bhat, (2014), p.45] – hence the principal-agent perspective on buyer-supplier relationships in this paper. In short, the agency theory attempts to explain relationships and self-interest in business organisations.

Automotive industry supply chains is of the utmost importance to the developing South African economy, as it is like other developing countries such as India and Brazil, the largest manufacturing industry and contributes substantially to the country's gross domestic product (6.9% in 2017 in South Africa) [AIEC, (2018), p.5]. The South African automotive industry reveals similarity in size and production to other developing economies such as Korea, Taiwan, India and Brazil [AIEC, (2018), p.30]. This study might therefore also be of interest for the other developing countries with established automotive industries. Because of its strategic importance, all efforts should be applied to sustain this industry in developing economies [Komarasamy and Hoque, (2015), p.975]. Due to fierce competition in the global automotive component market, suppliers (agents) are left with limited scope to differentiate through production, price and logistics, hence the only way to differentiate is through the actual relationship with the automotive component manufacturers (ACMs) (principal) [Tolmay and Badenhorst-Weiss, (2018), p.5]. Additional to this, the principals in the automotive industry are scaling down and working more closely with fewer suppliers (Manelloa and Calabrese, 2018), therefore it is important for suppliers (agents) to ensure that they are closely related to the principals in order to sustain and expand their business.

As uncertainty and competition within global markets negatively influence the principal-agent relationships – also in South African automotive supply chains – the result is that these supply chain partners no longer fully trust each other [Herko and Hanna, (2017), p.87]. This lack of trust negatively influences commitment, where both the principal and the agent act in a self-serving manner without considering the best interest of the other party [Herko and Hanna, (2017), p.87]. This can cause the risk of inefficiency between partners and, at worst, the destruction of the supply chain. It is therefore important for both parties to strategically manage their relationship and consciously enhance trust and commitment to sustain and ultimately expand business [Meng et al., (2017), p.663].

Although the principal-agency theory in the supply chain environment is often visualised in a unidirectional manner where only the principal, due to his buying power, acts in a self-serving manner to benefit, this cannot be further from the truth [Zardkoohi et al., (2017), p.405]. The agents also act in the same manner [Zardkoohi et al., (2017),

p.406], which contributes to increased risk [Li et al., (2015), p.85]. Accordingly, in the principal-agent phenomenon self-serving behaviours causes risk for both parties. When the principal terminates the agent's contract the agent is at risk, and when the principal loses the agent the principal also suffers substantial losses and the complete supply chain is put at risk [Zardkoohi et al., (2017), p.405].

This study focuses on supply chain relationships in terms of trust and relationship from an agency-theory perspective, and the role of trust and commitment in possible business expansion in sustainable supply chains in the automotive industry in South Africa.

2 Background and problem statement

Today's supply chain environment is very complex and uncertain with various challenges and supply chain risks [Monroe et al., (2014), p.4; Meng et al., (2017), p.663]. Close cooperation between principal and agent (buyer and seller) within supply chains promises to mitigate risk [Cheng and Chen, (2016), p.111]. However, automotive supply chains in South Africa are often characterised by less optimised principal-agent relationships resulting in elevated uncertainty and risk (Maile, 2008; Naudé et al., (2013), p.1; Tolmay and Badenhorst-Weiss, (2018), p.4). Naudé and Badenhorst (2011) found signs of strained relationships between original equipment manufacturers (OEMs) (principals) and ACMs (agents) in the South African automotive industry.

Problems brought about by the agent that may put the relationship at risk include unpunctual deliveries, limited problem-solving commitment, poor service, manipulation of markets by bribing purchasers, quality defects and overcharged prices for products [Steinle et al., (2014), p.124]. On the other hand, the principals in automotive supply chains increase pressure by forcing the agents to facilitate a reduction in transaction cost over time [Rao, (2015), p.28]. Increasingly difficult economic circumstances make it harder for the agent to request accommodating circumstances within the contract from the principal [Rao, (2015), p.29]. Further, supply chain principals are cutting down on the number of agents and rather focusing on single sourcing, which further threatens the retention of business for certain agents [Steinle et al., (2014), p.124], yet business expansion for only one agent. However, this may elevate all the risks associated to single sourcing for the principal. Strained principal-agent relationships mitigate trust and commitment between parties that negatively influence sustainability and business expansion of the supply chains [Ghadge et al., (2017), p.264]. Because of the elevated risk, both parties have responsibilities to contribute towards the relational exchange. Although trust from both sides is a requirement for a good relationship, the agent, in particular, must aim to enhance the trust of the principal, and the principal must commit to the agent in order to sustain and even expand business opportunities for both parties [Andersen et al., (2016), p.81]. Because of the complexity of conceptualising trust and commitment, Chen et al. (2013, p.811) have suggested further research in this regard in automotive supply chains [Kurien and Qureshi, (2015), p.70; Maestrini et al., (2016), p.291].

This paper aimed to:

- 1 determine if ‘self-serving’ behaviour according to the agency theory is present in the South African automotive supply chain relationships, therefore a low level of trust and commitment between the principal and agent
- 2 to contribute to the clarification of the relationship between trust and commitment in relation to possible business expansion (growth) in automotive supply chains.

With regard to the second aim it was intended to determine whether trusting the agent would result in business expansion, and secondly whether commitment (from the principal) would act as a mediator towards business expansion for the agent.

From the aim of the study the two research questions to be addressed in this paper were; ‘Is there a lack of trust and commitment in the buyer-supplier relationships between component manufacturers and their first tier suppliers?’ and ‘What is the relationship between (1) trust and (2) commitment with business expansion within South African automotive supply chains?’ The objective of this paper was thus to investigate the relationships between suppliers (agents) and buyers (principals) terms of trust and commitment.

The scope of the paper includes a reflection on agency theory and the uncertainty and risk when one or both of the parties behave in a self-serving manner [Steinle et al., (2014), p.135; Li et al., (2015), p.84]. The relationship between trust, commitment and business expansion is explored. Finally, possible action plans for both agents and principals are presented with the aim to enhance supply chain sustainability through business expansion. This might provide more insight into sustaining automotive supply chains within developing countries [Komarasamy and Hoque, (2015), p.975] as invited by literature.

3 Literature

Previous research in buyer-supplier relationships in supply chain management indicated that the relationships are not always as strong as it should be, due to behaviour of one or both parties in the supply chain, thus the principle-agency lens of this paper. In addition, this perspective was adopted due to a call by literature for more research to clarify concepts of the principal-agency theory within supply chains specifically [Steinle et al., (2014), p.123; Byrne and Power, (2014), p.440; Rao, (2015), p.28; Wilhelm et al., (2016), p.43; Zardkoohi et al., (2017), p.405]. According to Shafiq et al. (2017, p.1386) opportunistic behaviour in the principal-agency relationship causes risk and hampers business expansion.

3.1 Principal-agency theory

The ‘principal-agency’ or just ‘agency’ theory is concerned with resolving problems that can exist in relationships, such as buyer-supplier relationships in supply chains, due to unaligned goals or different aversion levels to risk [Li et al., (2015), p.85]. According to Zardkoohi et al. (2017, p.405), the theory in a business sense is mainly concerned with the relationship between principals and agents within supply chains. The principal sources products or services from the agent who provides the required offering to the

principal. The principal-agency theory aims to better understand and even to improve supplier interaction within supply chains [Steinle et al., (2014), p.135].

Most often, literature states that the problem arises when the principal abuses his 'perceived' superior (buying) power over the agent [Li et al., (2015), p.84; Wilhelm et al., (2016), p.43]. Mistakenly the principal is often viewed as the sole benefactor of the principal-agent relationship. To explain this misconception: the agent of one principal can also be a principal in the same supply chain [Wilhelm et al., (2016), p.43]. For example, a tier 1 supplier who is an agent for ACMs (principal) can also act as a principal when he sources products from a tier 2 supplier (agent). Therefore, actions by the principal do not only affect the direct supplier (agent) and the principal but the complete supply chain. Zardkoohi et al. (2017, p.406) further state that not only all stakeholders within the supply chain are negatively affected by the risk that principal-agency opportunism causes, but the broader society is also at risk.

3.2 Principal-agency theory and supply chain risk

As indicated previously, the principal-agency relationship is particularly applicable to supply chains [Steinle et al., (2014), p.135] and researchers are becoming more interested in the principal-agency theory to examine supply chain risks [Li et al., (2015), p.84]. Supply chain risks caused by or experienced by one stakeholder in the supply chain can negatively influence the efficiency, sustainability and business expansion of the complete supply chain with all stakeholders [Li et al., (2015), p.83; Zardkoohi et al., (2017), p.406].

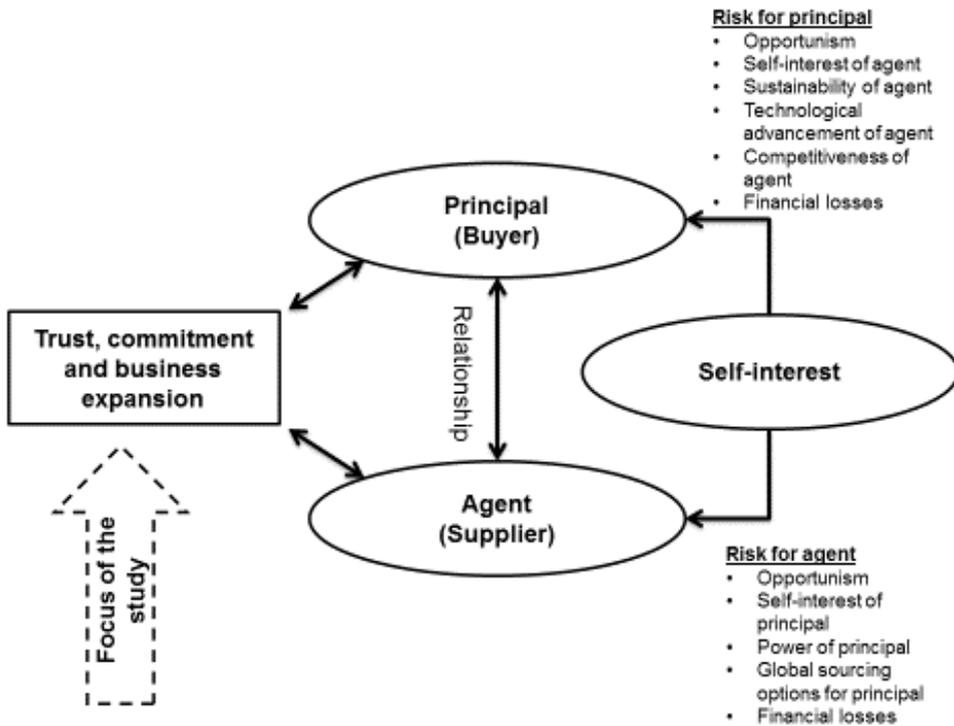
Opportunism is a key concept of economics theories, including institutional economics, the relational exchange theory and principal-agent theory [Steinle et al., (2014), p.125]. Opportunism is defined as self-interest-seeking with guile, which includes actions such as stealing, cheating, distortion of data, breach of contract, dishonesty, misinterpretations, false threats and promises, and withholding information [Steinle et al., (2014), p.125]. Further, central to this opportunism in the principal-agency theory is risk, where hidden agendas and self-interest affects trust in the supply chain [Steinle et al., (2014), p.125].

Zardkoohi et al. (2017) identifies three-directional opportunism relating to principal-agent relationships. Firstly, the agent can behave opportunistically against the principal's interest, secondly, the principal can behave opportunistically against the agent's interest and finally, both the principal and agent can act opportunistically against the interest of a third-party stakeholder, which may also be the broader society [Zardkoohi et al., (2017), p.405]. Ultimately, opportunism leads to the demise of trust, which negatively affects the commitment; hence, sustainability and business expansion are ultimately sacrificed [Vieira et al., (2013), p.267].

Under the umbrella of the principal-agent theory, the study aims to address the relationship(s) between agents and principals and the phenomena of trust, commitment and business expansion (refer to Figure 1). With the principal-agent relationship, self-interest applies to both parties and the principal as well as the agent encounter uncertainty and risk (refer to Figure 1). The principal is faced with the risk attached to the opportunism and self-interest of the agent, sustainability, technological advancement, competitiveness of the agent and financial losses (refer to Figure 1). While, opportunism results in the following possible risks for the agent: opportunism and self-interest of the

principal, power of the principal, global sourcing options available to the principal and financial losses due to the principal’s opportunistic actions (refer to Figure 1).

Figure 1 Conceptualisation of principal-agent theory applicable to the study



Source: Authors

Shafiq et al. (2017, p.1386) possibly touch on the most problematic principal-agent risk, namely the risk of sustainability. Today, not only business sustainability (and ultimately business expansion) is required by organisations, but also sustainability of the environment and the broader society. Sustaining the broader society through the business is an increasingly important responsibility and is at risk with opportunistic behaviour from one or both stakeholders (agent and principal) [Shafiq et al., (2017), p.1386]. It is therefore clear that the risk encountered through the principal-agency theory has an impact on much more than just the principal or the agent. In this regard, Li et al. (2015, p.85) state that supply chain risk mitigation strategies, which promise profitability and sustainability, need to be implemented on a strategic level. In line with the supply chain risk mitigation and the principal-agency theory, literature eludes to the fact that trust may mitigate some of the risk within the supply chain [Steinle et al., (2014), p.125].

3.3 Trust

According to Steinle et al. (2014, p.125), trust mitigates risk within supply chain relationships and the absence of trust hampers the supply chain relationship’s sustainability [Steinle et al., (2014), p.124]. The Oxford Dictionary’s definition of trust is

the “firm belief in the reliability, truth, or ability of someone or something”. Trust is a complicated and multifaceted concept, but it is mainly perceived as the rational response to trustworthy behaviour by others [Uslaner, (2002), p.6; Tolmay and Badenhorst-Weiss, (2015), p.3]. Trust is crucial for a long-term relational exchange between supply chain partners [Wisner et al., (2016), p.79] as trust is viewed as a value creator [Herko and Hanna, (2017), p.86]. Chao et al. (2013, p.1060) state that supply chain relationships should exclusively be built on the foundation of trust. It is therefore important to enhance trust within supply chains as it may result in commitment, satisfaction, innovation, business retention, sustainability, better supplier performance, as well as the sharing of information and knowledge [Tolmay and Badenhorst-Weiss, (2015), p.4]. Ebrahim-Khanjari et al. (2012, p.447) confirms that trust within supply chain relationships might possibly result in business expansion, but more research on the clarification of trust within supply chains is invited by Maestrini et al. (2016, p.291).

Trust also forms the core of the principal-agency theory within supply chains [Steinle et al., (2014), p.125]. According to the principal-agency theory, the agent (or supplier) is forced to comply with the requirements of the principal (buyer). However, the principal must also comply through commitment as the loss of an agent would have elevated risk factors for the principal as well as the agent, and threaten the sustainability of the supply chain. The principal is responsible for the management of the relationship with upstream agents, but is also challenged, as these agents are globally dispersed, situated in remote locations and may not have access to collaborative technologies [Wilhelm et al., (2016), p.42]. Language barriers and cultural backgrounds can prevent trust within supply chains resulting in underperformance [Herko and Hanna, (2017), p.88; Ambe (2014), p.48]. The situation of different culture and language is most applicable to the South African automotive supply chains that represent automotive role players from Japan, Germany and the USA [Ambe (2014), p.48]. This aspect can therefore have an impact on supply chains and principal-agent relationships.

Trust considers two components, namely the interpersonal mechanism and a future-oriented focus [Herko and Hanna, (2017), p.88]. Interpersonal mechanisms relate to the trust in humans, not organisations, where trust expectations are made on the human. The other aspect of trust is a future focus where the future outcomes influence the present actions [Herko and Hanna, (2017), p.88]. When a party is trusted, the party is experienced as reliable, honest, competent, fair, committed, helpful and responsible [Morgan and Hunt, (1994), p.23]. Specifically relating to the supply chain, Hofstede et al. (2006, p.122) state that trust comprises enforceable and intrinsic trust. Enforceable trust relates to trust in good performance, while intrinsic trust relates to consent vulnerability. This vulnerability encapsulates the basic need of human beings to affiliate with another person who is perceived as trustworthy. Enforceable trust is more applicable to the automotive supply chains when the trustor (buyer) expands or suspends contractual obligation based on the supplier’s performance. Hence, the performance of the trustee (supplier) is accordingly rewarded or punished by the trustor (buyer/customer) [Hofstede et al., (2006), p.124].

Trust in the buyer-supplier relationship in supply chains encapsulates real benefits for both the principal and the agent. Chen et al. (2013, p.800) go as far as to argue that trust and commitment are the key success factors for a lasting supply chain relational exchange. In scholarly literature, authors seem to agree that trust results in commitment [Morgan and Hunt, (1994), p.33; Chen et al., (2013), p.803, (2014), p.37; Muneer et al.,

(2014), p.44; Kač et al., (2015), p.77; Chou et al., (2015), p.4]. It therefore makes sense to study commitment with the concept of trust.

3.4 Commitment

Commitment entails the exchange partner believing in an ongoing relationship to such an extent that the maximum efforts would be applied to maintain the relationship indefinitely [Morgan and Hunt, 1994; Chen et al., (2013), p.802]. Hence, partners devote themselves to a sustainable relational exchange in order to realise the ultimate goal of business expansion [Chao et al., (2013), p.1060]. As part of continuous improvement, supply chain partners strive to achieve commitment as literature has acknowledged commitment as a key competitive success factor [Walter et al., (2000), p.1; Muneer et al., (2014), p.43].

Commitment is not viewed as a one-directional or one-dimensional concept [Chao et al., (2013), p.1060]. Literature states that different types of commitment exist, including affective, normative and continuance commitment [Muneer et al., (2014), p.46]. Affective commitment reflects the emotional attachment of people and their connection with partners [Muneer et al., (2014), p.43]. Affective commitment addresses needs such as esteem, approval and emotional support [Muneer et al., (2014), p.45]. With normative commitment, both partners enjoy the relationship and wish to continue with the relational exchange because of the mutual benefit of the partnership. Parties in a normative commitment feel that they have an obligation, and the right thing is to remain with the organisation [Muneer et al., (2014), p.46]. The continuance commitment embodies commitment associated with cost when leaving the relationship [Muneer et al., (2014), p.46], for instance a contractual obligation [Geyskens et al., (1996), p.305]. Geyskens et al. (1996, p.304) also refer to 'calculative' commitment, which is in principle the same as continuance commitment, where financial losses would be incurred when the relationship is dissolved. Maestrini et al. (2016, p.291) suggests more research on the importance of commitment for business expansion in buyer-supplier relationships.

Vos et al. (2016, p.3) emphasise the importance of commitment as it forms the foundation of the social exchange between principals and agents within supply chains. They allude to the fact that commitment plays an important mediating role in the relational exchange [Vos et al., (2016), p.10], which will be investigated further through this paper. In conclusion, it seems that commitment in supply chain relationships is important for a relationship to last.

4 Methodology

The study followed a positivists philosophy and was explanatory descriptive by nature as it expected to determine relationships between constructs [Saunders et al., (2009), p.140]. A deductive research strategy was followed to better understand a social science phenomenon [Saunders et al., (2009), p.125], in this case, identifying the relationship between trust, commitment and business expansion.

In order to determine the relationship between the suppliers and buyers and clarifying trust, commitment and business expansion, the questionnaire utilised during the research asked questions specifically relating towards trust and commitment as well as business expansion. The unit of analysis for the study tested the perceptions of the supply chain

principals (ACMs) with regard to their relationship with the agents (suppliers) in South African automotive supply chains. The empirical study was quantitative by nature and utilised a structured closed-ended questionnaire based on the original research of Morgan and Hunt (1994, p.35) on commitment, as well on trust. Both commitment and trust comprised one factor each made up of three items, which is considered the minimum number of items in a scale, and thus, solid [Costello and Osborne, (2005), p.3; Henson and Roberts, (2006), p.408]. The three items with its associated scales are reflected in Table 1. Business expansion was measured through a single item: “My firm expects to expand the business they currently do with Supplier A” obtained from Eggert et al. (2006, p.26).

The questionnaires were administered via email to senior managers at ACMs who are members of the National Association of Automotive Component and Allied Manufacturers of South Africa (NAACAM). Non-respondents were followed up via telephone and if they still did not respond, telephonic interviews were conducted with them. The response rate was 81.4% as 114 responses were received from a total of 140. After the responses had been received, the data was analysed and interpreted.

By using the Cronbach alpha coefficient, the internal consistency (reliability) for trust and commitment was found to be 0.917 and 0.825 respectively. Both these values were above the acknowledged threshold of 0.7, therefore, they were deemed satisfactory [Pallant, (2011), p.7]. The factor-based scores for both trust and relationship value was subsequently calculated as the mean score of the variables included in each factor.

Table 1 Constructs scales for trust and commitment

<i>Construct</i>	<i>Items</i>	<i>Factor loadings</i>	<i>Cronbach alpha</i>
Trust	In our relationship, my firm feels that Supplier A can be counted on to do what is right.	0.906	0.917
	In our relationship with Supplier A, our firm feels that Supplier A can be trusted.	0.938	
	In our relationship, Supplier A demonstrates a high level of integrity.	0.935	
Commitment	The relationship that my firm has with Supplier A deserves our firm’s maximum effort to maintain it.	0.730	0.825
	The relationship my firm has with Supplier A is something my firm intends to maintain indefinitely.	0.836	
	The relationship my firm has with Supplier A is something we are very committed to.	0.734	

Source: Authors

Table 2 Correlation matrix

	<i>Trust</i>	<i>Commitment</i>	<i>Business expansion</i>
Trust	1	.690	.571
Commitment	.690	1	.595
Business expansion	.571	.595	1

Note: All correlations were significant at 0.01 (2-tailed).

To ensure that there are no violations of assumptions of normality, linearity and homoscedasticity a preliminary analyses was performed. The correlation matrix (Table 2) tested for multicollinearity and all constructs revealed to be independent ($r < .9$) [Pallant, (2011), p.151].

The constructs trust and commitment were included in the questionnaire to determine their extent, relationship and influence on business expansion within South African automotive supply chains as well. The statistics of the constructs trust, commitment and business expansion are presented in Table 3.

Table 3 Statistics trust, commitment and business expansion (n = 114)

	<i>Trust</i>	<i>Commitment</i>	<i>Business expansion</i>
Mean	5.87	5.76	6.62
Median	6.00	5.67	6.00
Std. deviation	0.93	0.86	1.23
Skewness	-0.86	-0.17	-0.86
Std. error of skewness	0.23	0.23	0.23
Kurtosis	1.13	-0.47	0.80
Std. error of kurtosis	0.45	0.45	0.45
Minimum	2.33	3.67	1.00
Maximum	7.00	7.00	7.00

Source: Authors

The study utilised a bipolar seven-point semantic differential scale and respondents had to choose their perception on a statement from ‘strongly disagree’ to ‘strongly agree’. The mean scores for the constructs (trust and commitment) and the single item (business expansion) were higher than 5 and therefore meaningful [Pallant, (2011), p.242]: trust (5.87), commitment (5.76) and business expansion (6.62). This means that there is to a large extent trust and commitment, and a willingness to expand business with current suppliers from the principals’ perspective in the automotive supply chains. The skewness values of trust (-.86), commitment (-.17) and business expansion (-.86), and kurtosis values for trust (1.13), commitment (-.47) business expansion (.80) do not show deviations from normality.

Table 4 Regression trust and commitment

<i>Model</i>	<i>Model 1</i>			<i>Model 2</i>		
<i>Statistics</i>	<i>Business expansion</i>			<i>Business expansion</i>		
	<i>R²</i>	<i>F value (Sig)</i>	<i>Standardised beta</i>	<i>R²</i>	<i>F value (Sig)</i>	<i>Standardised beta</i>
Predictor – trust	.326	52.82 (.000)	.571			
Predictor – commitment				.354	59.69 (.000)	.595

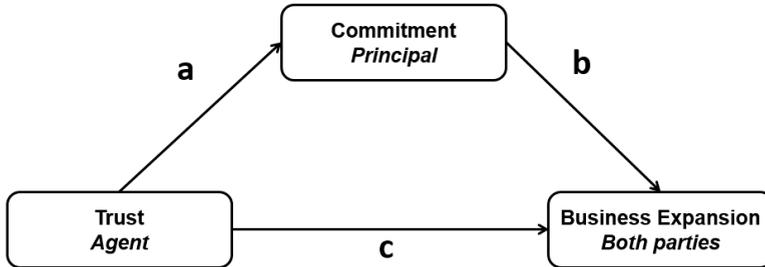
Source: Authors

To test the extent to which trust and commitment can be used to predict business expansion, a regression-based analysis was conducted. Firstly, the directional relationship

between the independent variable (trust) with the dependent variable (business expansion) was tested after which commitment was added to determine if it explained the additional variance in the dependent variable. The results are in Table 4. The regression model (Table 4) reveals that both trust and commitment are statistically significant predictors of business expansion. Commitment is seen as the slightly more important predictor of business expansion (standardised $\beta = 0.595$) than trust (standardised $\beta = 0.571$).

In order to test whether commitment acts as a mediator between trust and business expansion, the four steps according to Baron and Kenny (1986), Judd and Kenny (1981), and James and Brett (1984) were followed (Figure 2).

Figure 2 Mediation model



Source: Authors

Table 5 Test for mediation

<i>Model 1 (path a)</i>			
Dependent variable		Commitment	
Statistics	R^2	F value (Sig)	Standardised beta
Predictor – trust	.477	101.11 (.000)	.690
<i>Model 2 (path c)</i>			
Dependent variable		Business expansion	
Statistics	R^2	F value (Sig)	Standardised beta
Predictor – trust	.326	52.82 (.000)	.571
<i>Model 3 (paths a, b and c)</i>			
Dependent variable		Business expansion	
Statistics	R^2	F value (Sig)	Standardised beta
Predictor – trust	.403	36.42 (.000)	.306
Predictor – commitment			.383

Note: * $p < 0.05$

Source: Authors

Firstly, trust (first model in Table 5 and path *a* in Figure 2) was revealed as a significant predictor of commitment. Secondly, trust (model 2 in Table 5 and path *c* in Figure 2) was utilised as the criterion variable in the regression and business expansion as the predictor in order to test the path between the two constructs. This step establishes whether there is an effect that can be mediated. Thirdly, business expansion (model 3 in Table 5 and paths

a, *b* and *c* in Figure 2) was used as the criterion variable in a regression equation with trust and commitment as predictors. Fourthly and finally, it was determined that while the effect of trust reduced with the inclusion of the mediator variable, it remained a statistical significant predictor of business expansion, which implies that commitment is a mediator between trust and business expansion.

The aim of the regression analysis was to test whether commitment mediates the effect of trust on business expansion. Results indicated that trust was a significant predictor of business expansion (standardised $\beta = 0.571$; $p < 0.05$). With the introduction of commitment as mediator the direct positive relationship between trust and business expansion reduced significantly (standardised $\beta = 0.306$; $p < 0.05$). The indirect effect of the mediator was also tested with the Sobel test ($z = 3.469$; $p < 0.05$). This supports the partial mediation hypothesis. Approximately 40% of the total variance in business expansion was accounted for by the predictors trust and commitment.

The model was found to be a good fit confirmed by the following statistics; NFI = 0.982 (exceeding the .09) (Byrne, 1994), TLI = 1 (exceeds .9) (Hu and Bentler, 1995), CFI = 1 (above .70) (Bollen, 1989), RMSEA = 0 (<0.1) (Fan et al., 1999), PCLOS = .806 and CMIN/DF = .844 (>.05) [Pallant, (2011), p.176].

5 Discussion

The automotive industry is of strategic importance for the developing South African economy and therefore all efforts should be applied to maintain the industry. From a principal-agency perspective, automotive supply chain role players, namely the principal (buyers) and the agent (suppliers) need to work together to realise real benefits such as business expansion. It was always accepted that large powerful buyers, such as automotive manufacturers, abuse their buying power and put unfair pressure on suppliers. However, the risk relating to self-serving behaviour in the principal-agency theory should not only be seen in a unidirectional manner where only the agent (supplier) must satisfy the principal (principal); the principal also needs to act in the best interest of the agent. Therefore, the agent must be fully trusted by the principal and the agent must aim to enhance the trust of the principal through consistent optimal deliveries. In return, the principal must commit to the agent in order to sustain and even expand business for both parties.

Contrary to supply chain management principles and theory that encouraging positive supply chain relationships, it was found by various studies that supplier relationships are often hampered by conflict mainly as a result of self-serving behaviour (principal-agency theory), which results in risk. This was also indicated by previous studies specifically in automotive supply chains [Maile, 2008; Naudé et al., (2013), p.1; Sharma and Bhat, (2014), p.45]. However, with this study it was found that there are to a large extent trust (5.87) and commitment (5.76) in the South African automotive supplier relationships, at least from the ACMS' (principals') perspective, with their upwards suppliers, which means that self-serving behaviour in the principal-agency situation is not as prominent as had been expected.

In the business environment, parties, including supply chain partners, aim to sustain or grow business and enhance business expansion. Trust and commitment are seen as risk alleviators and important for a successful growing buyer-supplier or principal-agent relationships. When trust and commitment within the principal-agent relationship is

absent or not optimal both parties may encounter elevated uncertainty with regard to operational and supply risk, which is not conducive for business expansion between the parties [Steinle et al., (2014), p.123].

The research question addressed in the second research question was ‘What is the relationship of (1) trust and (2) commitment with business expansion within South African automotive supply chains?’ The research aimed to determine whether trust in the agent by the principal would result in business expansion and secondly, whether commitment from the principal in the agent would result in business expansion.

A regression model revealed that within the South African automotive supply chains both trust (model 1, Table 4) and commitment (model 2, Table 4) are experienced or viewed as predictors of business expansion. Trust is also viewed as an antecedent of commitment (model 1, Table 5) and trust is viewed as an antecedent of business expansion (model 2, Table 5). Also, aligned to previous research [Ebrahim-Khanjari et al., 2012; Yeh, (2012), p.12], commitment result in business expansion (model 3, Table 5), and trust result in business expansion (Morgan and Hunt, 1994; Vieira et al., 2013). The research found that commitment acts as a mediator between trust and business expansion, suggesting that if the agent displays trustworthy actions, it will lead towards commitment by the principal and ultimately business expansion for the supplier (agent) and the sustainability of the complete supply chain.

6 Conclusion and recommendations

This study contributed theoretically by viewing supply chain relationships from a principal-agency theory perspective, specifically focussing on trust and commitment in automotive supply chain relationships in South Africa, and its influence on business expansion (sustainability). Although this study was conducted in South Africa, representing developing country market conditions, other developing countries with a strong presence of automotive manufacturing such as India and Brazil, may also benefit from this study.

Whole communities, towns and cities in South Africa, for example, in the provinces of Eastern Cape, Gauteng and Durban, are dependent on the automotive assemblers and its network of suppliers, and thus the continued relationships between the different tiers of suppliers with in automotive supply chains. Sustaining the broader society through the business is an increasingly important responsibility and is at risk with opportunistic behaviour from one or both stakeholders (agent and principal) [Shafiq et al., (2017), p.1386]. It is therefore important that committed, trusting relationships exist between automotive manufacturers and their local suppliers. This study found that there is to a large extent trusting, committed relationships. However, such relationships are not only important with local suppliers. If the component manufacturer does not have a committed, trusting relationship with important international suppliers it can lead to a supply risk that can threaten the sustainability of the component manufacturer. It is accepted that it is more difficult to trust and be committed to relationships of other cultures [Ambe (2014), p.48]. However, despite the fact that the respondents of this study have existing international suppliers, they indicated that trusting and committed relationships exist with all suppliers.

This study also contributed to finding a theoretical (analysis of literature) and a statistical relationship between trust, commitment and business expansion in

principal-agent or buyer-supplier relationships. Without trust and commitment there is limited business expansion for principal-agent relationships in supply chains. Trusting, committed relationships are thus a requirement for business expansion or sustainable growth in supply chains. The loss of the principal-agent relationship would result in uncertainty and elevated risk for both the agent and principal.

With regard to managerial implications through a principal-agency lens it is recommended that both the principal (buyer) and agent (supplier) act responsibly in their relationship as follows (derived from Figure 1):

The agent (supplier) should abstain from opportunistic behaviour and serving self-interest in the business relationship with the principal. This means that the agent must at least keep to the conditions of the contract with regard to quantity, quality and timelines. The agent must communicate timeously with the principal about possible supply problems; stay competitive and keep up with technological developments. The agent needs to improve problem-solving commitment, and refrains from manipulation of markets by bribing purchasers.

The principal (buyer – component manufacturer) must abstain from opportunistic behaviour and serving self interest in its business relationship with suppliers. This includes the abuse of buying power to force suppliers in unsustainable contracts. The principal must also carefully considering the implications of replacing local suppliers with more ‘profitable’ international suppliers. Supplier development is the better option.

There are limitations to the study as the survey only interviewed ACMs (principals) in South African automotive supply chains about their views of relationships with their suppliers. The suppliers (agents) might not feel exactly the same about the trust, commitment and business expansion between the parties. Despite the one-sided view, one can conclude that if relationships were strained through a lack of trust, commitment and business expansion it would have been clear from the results of this study. Future research may include the perspective of the agents (suppliers).

Also, the results may not be applicable to the different tiers in automotive supply chains or diverse supply chains. Further research can include more constructs and/or the study could be done in diverse supply chains and industries. Another opportunity for future research is an analysis of the relationships between OEMs (such as Toyota and Ford) and ACMs. Naudé and Badenhorst (2011) found signs of strained relationships between OEMs and ACMs, but only from the ACMs perspective in the South African automotive industry.

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