THE EFFECT OF MARKETING INNOVATION ON CUSTOMER SOLUTION PERFORMANCE IN ETHIOPIAN ICT BUSINESS MARKET

BY

TEGEGNE YISMAW ABU

A Thesis Submitted to Addis Ababa University School of Commerce, in the Partial Fulfillment for the award of Degree of Masters of Arts in Marketing Management

ADDIS ABABA, ETHIOPIA

MARCH 2023

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Declaration

I, the undersigned, declare that this thesis, prepared under the guidance of **Andinet Worku (Ph.D.),** is my original work, All sources materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

_____ _____

Tegegne Yismaw Date

STATEMENT OF CERTIFICATION

This is to certify that **Tegegne Yismaw** has carried out his research work entitled *"The Effect of Marketing Innovation on Customer Solution Performance in Ethiopian ICT Business Market"* for the partial fulfillment of Masters of Arts in Marketing Management at Addis Ababa University School of Commerce. This study is original and is not submitted for any degree in this university or any other universities and is suitable for submission for Masters of Arts in Marketing Management.

Advisor _____ _____

Andinet Worku (Ph.D.) Signature Date

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BY

TEGEGNE YISMAW ABU

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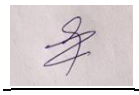
Yibeltal N.(Asst. Prof.)		02/04/2023
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Table of Contents

Contents **Page**

ACKNOWLEDGEMENT

First and foremost I would like to thank Almighty God for granting me the strength, courage, patience and inspirations in completing this work. Next, I would like to express my sincere thanks and gratitude to my lovely family for their moral encouragement, prayer throughout my life and support in all my academic achievement.

I am very grateful to my advisor Andinet Worku (Ph.D.) for his professional assistance, patience and understanding that help me for the completion of this study. I am also thankful to my colleagues and friends for their cooperation, encouragement, constructive criticisms, intellectual support and guidance.

Finally, accomplishment of this work would have been impossible in the absence of data. Many thanks are due to all respondents from ICT solution providers and customers for their kind cooperation towards successful completion of this work.

List of Abbreviations

CSP	Customer Solution Performance
ICT	Information Communication Technology
PLS-SEM	Partial Least Square Structural Equation Modeling
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Science

List of Tables

List of Figures

ABSTRACT

This study investigated the effect of marketing innovation on customer solution performance in ICT business-business market. A cross-sectional data was collected from matched 84 ICT solution customers firms in Ethiopia referred by solution providers randomly selected from a list of 148 registered their ICT solution provider firms. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyses the collected data from the survey questionnaire using IBMS SPSS 21.0 and SmartPLS 4. The study found that retail innovation ($\beta = 0.217$; $t = 2.053$; $p < 0.05$) has positive and significant effect on customer solution performance in the ICT solutions business market. The study provides valuable insights and guidance for academicians and practitioners on the effect of retail innovation on enhancing the performance of customer solutions in the context of Ethiopian ICT business market. To respond to the merging dynamic ICT solutions business market, ICT solution provider firms should emphasize more on innovative retail strategies such as establishing show rooms and display units to enable solutions demonstrations, and launching internet platforms to enable online ordering by customers important to ensure the performance of ICT solutions.

Keywords: *Customer Solution Performance, Marketing Innovation, B2B market, PLS-SEM, ICT, Addis Ababa, Ethiopia.*

CHAPTER ONE

INTRODUCTION

Chapter one of this study introduces the underlying problems which lay the ground for the thesis by explaining the background and the research gaps. Following the research questions and objectives generated from the research gaps, the chapter presents definition of key terms, scope of the study, and significance of the study. The chapter closes with provision on organization of the thesis.

1.1 Background of the Study

Customer solution performance is one of the most extensively researched concepts in marketing. Prior researches that focus on customer solution revealed that in business to business context, solutions have enabled firms to respond to changing customer needs and increasing competition. To fulfill their customers' business or operational needs (Stancu and Hurduzeu, 2020) in a dynamic business environment (Berglund and Nilsson, 2020) firms need to maintain their competitive edge. To stay competitive, businesses have transitioned from traditional goods/services through product-service bundles to solutions providers (Bustinza et al., 2018; Duschek, 2015; Fakhfakh, 2020; Friend and Malshe, 2016; Restuccia and Legoux, 2019).

In addition to enabling differentiation and widening sphere of competition (Macdonald et al., 2016), the transition to solution provision has helped business firms address limitations pertinent with traditional offers - (goods/services and product-service bundles) such as inability to create unique customer value (Kleinaltenkamp et al., 2021), deficiency in supporting solution sustainability (Huang, 2018), and absence of provider-customer relationship (Penttinen & Palmer, cited in Stancu and Hurduzeu, 2020).

In order to help firms succeed in customer solution development and provision by countering pertinent challenges (Colm et al., 2020; Macdonald et al., 2016; Pekkarinen, 2015), scholars recommend that solution providers consider critical factors that facilitate delivery of effective customer solutions and evaluation of customer solution performance.

With respect to critical factors, researchers posit that employing strategic capabilities (Huikkola and Kohtamäki, 2017), solution-provision competence (Siahtiri et al., 2020), and solution business fitness (Kleinaltenkamp et al., 2021); customer-supplier capabilities (Berglund and Nilsson, 2020), supplier-customer governance matching[including resource integration] (Colm et al., 2020; Macdonald et al., 2016); customer capabilities [such as resources and processes] (Elgeti et al., 2020) and process reconfiguration capability (Macdonald et al., 2016); and relational solution development processes (Powers et al., 2016; Siahtiri et al., 2020; Stancu and Hurduzeu, 2020) enable firms facilitate delivery of effective customer solutions.

Besides provider and customer processes and resources, dynamic capability that enables firms to respond to changing customer demands is a requirement for providing customer solution (Saul and Gebauer, 2018). Marketing innovation is a dynamic capability that enables customer fulfillment (Chuwiruch et al., 2015; Ilić et al., 2014) by addressing their problems and needs with noble solutions (Ungerman et al. 2018). Marketing innovation enables provision of customer solutions that fulfill their needs by implementing significant changes in marketing mix elements (OECD, 2005). The field of marketing innovation still requires further research (Ramirez et al., 2018) with respect to its outcomes (Grimpe et al., 2017). The effects of marketing innovation in extant literature have been mostly related to performance (Peng et al., 2021) and competitiveness (Ahmad et al., 2021; Ungerman et al., 2018) of solution supplier firms. However, little is known how marketing innovation facilitates the effective delivery of customer

solutions. So, there an empirical research that explains how marketing innovation affects effective delivery of customer solutions.

With respect to evaluation of customer solution performance, previous works underscore that successful solutions signify customer desired customer outcomes (Neely et al., cited in Fakhfakh, 2020) or the realization of customer value that can be ensured only by an assessment after the implementation of the solution (OECD, 2018). Achievement of customer goal is a key metric to evaluate a solution's performance (Elgeti et al., 2020; Macdonald et al., 2016; Restuccia and Legoux, 2019; Siahtiri et al., 2020; Ulaga, 2018). Notably, only few researches are conducted on customer solution performance. These studies approach customer solution performance from only supplier perspective (Powers et al., 2016; Restuccia and Legoux, 2019; Siahtiri et al., 2020), or from only customer perspective (Macdonald et al., 2016) and from bilateral perspective (Huikkola and Kohtamäki, 2017; Yusuf, 2015).

Literature indicates that solutions business is a significant trend for firms across a wide range of business sectors in different countries. Scholars in their studies have covered sectors such as electronics, software, biomedical, telecom of China (Powers et al., 2016); management, engineering, financial consulting, and information and communication technology of Iran (Siahtiri et al. (2020); automotive, electronics, transport, health care, and food of Italy (Colm et al., 2020); IT of Romania (Stancu and Hurduzeu, 2020); software of German (Bertram et al., 2016); IT of Finland (Otra-Aho, 2017); and defense and security sector of Sweden (Berglund and Nilsson, 2020) among others. The information and communication technology sector is the most documented of solution provision fields (Bertram et al., 2016; Colm et al., 2020; Elgeti et al., 2020; Kleinaltenkamp et al., 2021; Otra-Aho, 2017; Powers et al., 2016; Siahtiri et al., 2020; Stancu and Hurduzeu, 2020) in these exemplar studies.

A preliminary observation of Ethiopian business shows that there are two sectors that are best suited to extend the solutions in Ethiopia. The first is construction and the second is information communication technology (ICT). In the construction sector, solution provision starts with design study to determine customer desired outcomes. However, the sector is complex, particularly with respect to number of parties that involve in the solution provision process (financing, planning, design, construction, operation, management, maintenance, and regulation) and modes of solution delivery (design-bid-build, design-build, and construction management) (Zuber et al., 2018).

In the ICT sector, requirements engineering (RE) sets the beginning for customer solution delivery. RE defines requirements of customers through elicitation, modeling analysis verification and validation, and management (Yos and Chua, 2018). ICT solution providers in Ethiopia are the majority in the ecosystem services that provides the underlying infrastructure and support services critical to the operations of a thriving digital economy with over 570 companies (Cepheus Capital, 2020).

Therefore, possess the ability to recognize opportunities in this fast-changing ICT solutions market and properly leverage it to their advantage through the provision of successful customer solutions, ICT solutions firms have to devote to marketing innovation as their dynamic capability.

1.2 Statement of the Problem

In the extant literature, customer solution performance as an outcome variable has been explained through capabilities of provider, customer, or both (Berglund and Nilsson, 2020; Colm et al., 2020; Elgeti et al., 2020; Huikkola and Kohtamäki, 2017; Kleinaltenkamp et al., 2021; Macdonald et al., 2016; Siahtiri et al., 2020) and relational solution development processes (Powers et al., 2016; Siahtiri et al., 2020; Stancu and Hurduzeu, 2020). However,

predictors of customer solution performance are rare in the extant scholarly contributions (Powers et al, 2016; Ulaga, 2018).

Some prior work report that innovation has 'outcomes [which are] observed effects on other organizations, the economy, society, and the environment' (OECD, 2018, p. 247). In line with this, marketing innovation, which is a class of innovation, has been identified as a dynamic capability that enables customer fulfillment (Chuwiruch et al., 2015; Ilić et al., 2014) by addressing their problems and needs with noble solutions (Ungerman et al. 2018). Dynamic capability is a requirement for providing customer solution (Saul and Gebauer, 2018). Yet, the field of marketing innovation still requires further research (Ramirez et al., 2018) with respect to its outcomes (Grimpe et al., 2017). In this regard, extant literature provides limited insights into how marketing innovation affects customer solution performance. Conducting a study that associates customer solution performance to marketing innovation provides empirical evidence. The research also has practical importance to managers and decision makers of solution provider firms in helping them identify marketing mix element that need innovation or significant change in order to achieve successful customer solutions.

Previous studies that focus on customer solutions performance investigated the variable either from only the solution provider's perspective (Powers et al., 2016; Restuccia and Legoux, 2019; Siahtiri et al., 2020), or from only solution customer's perspective (Macdonald et al., 2016) and from bilateral perspective (Huikkola and Kohtamäki, 2017; Yusuf, 2015). Still, research that provides empirical assessment of customer solution performance from the perspective of solution customer is scant. Conducting an empirical research based on data from solution customers enables to gain the perspective of solution customers.

To address the two research gaps identified in the paragraphs above, this study captured empirical data solution customers from a B2B ICT solutions market

in Ethiopia by building on dynamic capability theory and process-based approach to customer solutions development, and examining how marketing innovation affects customer solution performance by.

1.3 Research Questions

Based on the research gaps outlined above, this study addressed the central question: *To what extent can marketing innovation predict customer solution performance?*

The specific questions the study addressed are provided as follows:

1. To what extent can product innovation predict customer solution performance?
2. To what extent can pricing innovation predict customer solution performance?
3. To what extent can promotion innovation predict customer solution performance?
4. To what extent can distribution innovation predict customer solution performance?

1.4 Research Objectives

The general objective of the study was to examine the effect of marketing innovation on customer solution performance of B2B information communication technology consultancy in Ethiopia.

To achieve the general objective stated above, the specific objectives of the study were:

1. To investigate the effect of product innovation on customer solution performance;

2. To assess the effect of pricing innovation on customer solution performance;
3. To evaluate the effect of promotion innovation on customer solution performance;
4. To analyze the effect of distribution innovation on customer solution performance;

1.5 Definition of Terms

Customer Solution: 'Customer solutions are a combination of goods and services that are selected and designed/modified to address business clients' needs and requirements' (Tuli et al., cited in Powers et al., 2016, p. 2)

Customer Solution Performance: Customer solution performance is the effectiveness of customer solution (Powers et al., 2016; Tuli et al., 2007)**.**

Marketing Innovation: 'The combination of significant product design improvements; implementation of new pricing strategies; implementation of entirely new retail concepts; and implementation of entirely new promotion concepts' (Stosic, cited in Quaye and Mensah, 2019, p. 19).

Product Innovation: Product innovation is 'significant changes in product design and packaging form and/or style without affecting the core functioning of the product' (Stosic, cited in Quaye and Mensah, 2019, p. 36).

Pricing Innovation: Pricing innovation is the use of a completely new pricing strategy for the first time and adopting alternative methods for varying prices based on condition to sell products (Quaye and Mensah, 2019).

Promotion Innovation: Promotion innovation is 'the use of new concepts and strategies to promote and sell firm's goods' (Wang, cited in Quaye and Mensah, 2019, p. 40).

Retail Innovation: Retail innovation is 'the implementation of new marketing methods of reaching out to customers with a product in a convenient and sound condition' (Quaye and Mensah, 2019, p. 43).

1.6 Significance of the Study

Theoretical Significance

This study contributes to the literature on solution performance in two ways. First, it introduces an empirical relationship between marketing innovation and customer solution performance. Second, the study responds to calls in the extant literature by empirically testing customer solution performance from both the provider and customer perspective(Powers et al., 2016).

Practical Significance

Since customization and adaption is key requirement in the provision of solutions (Jagstedt, 2016), the results of the proposed study may provide practical perspectives for solutions firms' managers and decision makers that help identify marketing mix element that need innovation or significant change in order to achieve successful customer solutions.

1.7 Scope of the Study

Conceptually, this study falls within marketing innovation and customer solutions domain. The study focuses on the investigation of the effect of marketing innovation on customer solution performance in B2B context. Cross-sectional empirical data from ICT solution customer firms was collected from ICT solution customer firms. Geographically, the study is limited to ICST solution customer firms located in Addis Ababa.

1.8 Organization of the Thesis

Including **Chapter one**, the structure of the proposed study outlines **five** chapters. **Chapter two** of the study deals with literature review on concept of marketing innovation, dimensions of marketing innovation, measuring marketing innovation, customer solution performance (CSP), and determinants of CSP, measuring CSP, related theories, empirical works, and conceptual framework.

In **Chapter three**, the study describes research methodology that goes through research approach, research design, population and sample size, sources and types of data, data collection methods, instruments, and procedures, method of analysis and presentation and, and data quality assurance.

Chapter four covers data presentation, analysis, and findings of the study. This chapter interprets and discusses results of the study along with pertinent literature. The **closing chapter** of the thesis incorporates summary, conclusion and recommendation of the study, research limitation and areas of future research.

References and data collection instrument are also included at the end of the study report.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter examines literature and theories pertinent to proposed study in order to reveal the main knowledge gap the study aims to address. The chapter discusses the review in three phases. The first phase of the review assesses literature theoretical models on customer solution performance its measurement. While the second phases of this chapter analyzes empirical literature, the third part outlines conceptual framework.

2.2 Review of Theoretical Literature

2.2.1 Resource-based view

The Resources-based perspective postulates that organizations positioned to have unique set of resources and capabilities will perform better than their competitors (Purchase and Volery, 2020). Capabilities possessed by suppliers and customers affect the development of integrated solutions (Berglund and Nilsson, 2020).

According to Berglund and Nilsson (2020), capabilities are explained as ‘complex bundles of skills and accumulated knowledge possessed by organizations that enables them to coordinate their activities and make use of their assets’.

Knowledge is a component in solutions to facilitate value creation. Some superior knowledge to the customer’s knowledge is crucial to facilitate a value surplus for the customer. This is often knowledge on technology and products, for example, related to the best use of the solution in different environments. This can help customers to improve their

operations, for example, by solving a problem that the customer is unable to resolve internally. This knowledge includes technology knowledge and, also, knowledge about the user and its potential usage of the solution (Jagstedt, 2016).

BT which focusses on both internal tangible and intangible assets

2.2.2 Dynamic capabilities theory

Dynamic capabilities refer to a firm's ability to integrate, build, and reconfigure competences, so as to address rapidly changing business environments and gain a competitive advantage (Saul and Gebauer, 2018; Tsou and Chen, 2020).

Dynamic capabilities are required to provide solution (Saul and Gebauer, 2018). Marketing innovation is a dynamic capability that enables customer fulfillment (Chuwiruch et al., 2015).

Dynamic capability theory provides on how to exploit business capabilities (Quaye and Mensah, 2019). ‘Business capabilities include the knowledge, competencies and resources that a firm accumulates over time and draws upon in the pursuit of its objectives. The skills and abilities of a firm's workforce are a particularly critical part of innovation-relevant business capabilities’ (OECD, 2018, p. 241).

2.2.3 Value-in-use approach

Value-in-use approach posits that value that emerges from customer usage of a solution (Macdonald et al., 2016). The focus of this perspective is how a solution is useful to its customers or otherwise.

To Macdonald et al. (2016) value-in-use comprises of ‘[a]ll customer perceived consequences arising from a solution that facilitate or hinder

achieving the customer's goals' (p. 8). To other researchers value-in-use is either value created for customer as perceived by customer (Prohl and Kleinaltenkamp, 2020) or customers' benefit delivered by solutions (Restuccia and Legoux, 2019).

Customer value has a variety of sources that include 'superior or simplified operations, cost savings, performance guarantees, convenience, customized service, and state-of-the-art offerings' (Miller et al. cited in: Restuccia and Legoux, 2019). Moreover, when solutions are customized, they have customization use value such as customer profitability, business development support, long-term solution, and customer reputation (Bertram et al., 2016).

2.2.4 Process-based approach

Process-based approach customer solutions posits that 'customers view a solution as a set of customer–supplier relational processes comprising (1) customer requirements definition, (2) customization and integration of goods and/or services and (3) their deployment, and (4) post-deployment customer support' (Tuli et al., 2007). This approach also enables assessment of extent to which the solution provider understood and met the client's requirements, and cooperated with the client to provide customized solutions (Powers et al., 2016).

Further, from the customer's point of view, 'a solution is not a worthy investment if the solution can't adapt to ongoing customer needs' (Huang 2018). Contrary to conventional reasoning held by solutions customers indicates that sustainability is ultimately unneglectable feature of a solution that customer solutions to be updated according to evolving customer needs' (Huang 2018).

2.2.5 Solution effectiveness model

This model, propose by Yusuf (2015), postulates that supplier-customer interaction efficacy positively affects solution's effectiveness. According to this model, customer value is assessed in terms of solution effectiveness, while supplier value is assessed in terms of customer-based relational performance.

According to Huang (2018)**,** customer value can be verified through joint evaluation of how much value the solution generates based on mutually accepted value metrics. This approach provides objective metrics that are common to both solution provider and customer. However, common value metrics across various solution offerings vary, limiting the application of the approach only to a particular solution offering.

2.3 Review of Empirical Literature

Jagstedt (2016), in a case study of three companies(telecommunications, security, and transportation) that focus on managerial challenges related to the development of integrated solution, investigated how dimensions of the concept of integrated solutions affect integrated solution. The researcher identified that product is influenced by the move to integrated solutions provision which requires it to be re-designed to enable solutions that are repeatable, but customizable. The researcher contends that this imposes challenge on how the new product is developed in terms of business process, resources and knowledge are associated with it so as to 'transform the company into a solutions provider'. The research further identified three dimensions of integrated solutions as addressing the customer, integration and customization where these dimensions, respectively, aim to create a value surplus, develop unique solution, and adapt to customer's needs.

Powers et al. (2016) studied provider and relational determinants that influence the performance of solution from a solution provider's perspective among a sample of randomly selected 500 Chinese high-tech (electronics, software, biomedical, telecom) companies. The researchers investigated how provider determinants (adaptiveness, customer emphasis, and cross-functional coordination) and relational determinants(information sharing, joint problem solving and conflict management) affect customer solution performance by analyzing data collected from senior level executives (marketing manager, marketing director, project manager, and R&D manager, and others), and confirmed that provider determinants are positively related to customer solution performance: adaptiveness ($\beta = 0.16$, $p < 0.01$), customer emphasis ($\beta = 0.10$, $p < 0.05$), and cross-functional coordination ($\beta = 0.12$, $p < 0.05$). The researchers also indicate that whereas among the relational variables, conflict management ($\beta = 0.17$, $p < 0.01$) and joint problem solving ($\beta = 0.19$, $p < 0.01$) are positively related; information sharing between the provider and the client is not related to customer solution performance. This study demonstrates strength in that it introduces empirical examination of dimensions of customer solution perspective. However, it has three limitations. With respect to methodology, cross-sectional data do not fully explain the impact of relational determinants on solution performance. Single informant was used to collect data from sample companies. Additionally, the study doesn't consider customer side perspective though customers makeup half of relational equation and are owners of the solution. Moreover, the four of the constructs used to measure customer performance are the process elements employed during solution development and integration (Tuli et al., cited in Stancu and Hurduzeu, 2020).

In a study Macdonald et al. (2016) conducted to understand the drivers of successful solutions, they investigated how business customers judge solutions by exploring the link between solution quality and value. By employing

repertory grid technique and means-end chains to conduct 36 interviews [with informants representing maintenance, operations, purchasing, and general management] from 4 industrial solutions customers (medical devices, printing, pharmaceuticals, and building products), the researchers found that solution quality depends on customers' evaluation of supplier, customer, and joint processes and resources. They also reported that customers' perception of quality is linked to both individual and collective customer value-in-use based on goal theory advanced by Woodruff (Woodruff, cited in Macdonald et al., 2016). Moreover, they documented that manager's role and firm characteristics moderate the link between value-in-use and solution quality implying variations in solutions appraisal. While this study has made important contributions with respect to expanded definition of customer solutions and constructs applicable to solutions from customer's point of view, it addresses the relationship between solution quality and value-in-use from only solution customer's view of successful solutions. Still, the research falls short of providing empirical relationship between the constructs under consideration.

Through a qualitative comparative case method that employed interviews with 35 executives from nine leading industrial solution providers, their strategic customers, and suppliers in the manufacturing sector in Finland, Huikkola and Kohtamäki (2017) analyzed solution providers' strategic capabilities that enable above average firm performance. The researchers identified that fleet management capability, technology-development capability, mergers and acquisitions capability, value quantifying capability, project management capability, supplier network management capability, and value co-creation capability.

In an empirical assessment to determine how knowledge-intensive business service firms support the development and deployment of their solution-provision competence through knowledge search and knowledge management

mechanisms, Siahtiri et al. (2020) identified that problem definition, solution design, deployment, and post-deployment customer support as firm-level solution provision competences of 500 firms from the management, engineering, financial consulting, and information and communication technology sectors in Iran. Through analysis of data from a multi-informant survey and 20 face-to-face interviews (with firms' managers, service and marketing managers), the researchers revealed solution provision competence (problem definition, solution design, deployment, and post-deployment customer support) is positively related to solution performance($\beta = 0.49$, $p < 0.01$). This research demonstrates strength by combining quantitative and qualitative data. However, it provides measurement of solution performance and related competency from only a solution provider's point of view. Moreover, the meaning of solution in this study is restricted and related to offer, not the effect(s) it has on customer.

Elgeti et al. (2020) assessed the resources and processes important for business customer firms to use solution successfully. By employing repertory technique on data collected from 20-indepth interviews with representatives [managing director, customer management, director of sales product manager, project manager, procurement manager, head of strategic marketing] of solution provider firms [IT, transportation, energy, automotive, electronic, finance, professional services, education, processing, professional devices], the researchers identified five customer capabilities: interactional capabilities, sourcing capabilities, experience utilization capabilities, internal organizational capabilities, and innovation capabilities. While this qualitative research provides insight on the capability portfolio solution customers need in solution usage from the perspective of solution suppliers, it lacks customers own evaluation and quantitative examination.

In a qualitative case study [of a private Swedish company] conducted to understand the effect of public-private business customer and provider

capabilities on the development of integrated solutions within domestic market of the defense and security sector, Berglund and Nilsson (2020) identified five capabilities namely, control capability, economic capability, organizational capability, production capability, and relational capability needed for developing the integrated solution. Production capability pertains to both actor while the other capabilities are common to supplier and customer. The researchers analyzed data they collect from business- and organizational documents, customers (project manager, strategic buyer, solution user], and case company (design authority, systems engineering manager, product development, customer support manager, head of product sales, and market and sales, technical support engineer). The strength of this study is that, in investigating capabilities needed to develop integrated solutions, it incorporates the perspective of the supplier and customer. However, the research doesn't provide empirical evidence that justify the effect of the capabilities identified on solution development.

With qualitative analysis of data from high-tech solution supplier and its customers(automotive, electronics, transport, health care, food) through a case study, Colm et al. (2020) identified governance-matching mechanisms (temporary asset colocation, network closure, knowledge-based boundary objects, rights allocation agreements, and liaison champions) help resolve tensions that emerge during solution-related exchange between actors along three solution development phases (experimentation, integration, and evolution). The research strong in that it incorporates dyadic data form supplier and customer representatives (12 managers of the supplier and 17 managers of customers) for analysis to provide full understanding of the issue from both sides of the actors. It also contributes highlights on how to address relational conflicts. However, to what extent the mechanisms address the disputes remains to be addressed through quantitative analysis.

Based on a field study of 10 leading product companies that provide solutions, through a circular process view of solutions, Huang (2018) identified that understanding the customer's actual and ongoing needs, organizing responsive systems integration, ensuring continuous customer value creation, and sustaining the solution in the network are the four distinctive capabilities businesses require for creating and delivering sustainable customer solutions. The researcher contended that responding to demands of customers that have emergent nature. The strength of the study is that it provided a mechanism to sustain customer solution (i.e., solution updating). However, the study is in short of quantitative empirical support to what extent the capabilities are associated to delivering sustainable solution.

With a sample size of 1,339 multiple informant data from 17 firms(industrial machinery and systems, mining and construction, cargo handling systems, network infrastructure, chemicals, food manufacturing and retailing, timber and pulp and paper, industrial consumables, telecommunications, and mobile software solutions) headquartered in Europe, Kleinaltenkamp et al. (2021) assessed that solution platform, industrialization, and commercialization capability sets make firms fit to succeed in solution business. This research demonstrates strength in three respects. It develops measures for capability constructs. It also provides both qualitative and quantitative analysis. Further, it provides a 15 years of longitudinal analysis. However, the researchers define solution performance as a solution provider firm performance. Still, the data used for analysis reflect only the solution provider perspective.

Yusuf (2015) empirically identified the drivers of customer solution effectiveness that are both effective for customer firms and profitable for supplier firms based on data collected form 84 dyads that comprised key informants in the supplier firms and their customer firms (key account manager, business unit manager, sales manager, project manager, customer account manager, marketing manager, and managing director). By assessing

customer value in terms of solution effectiveness and supplier value is in terms of customer-based relational performance, the researcher identified that supplier-customer interaction efficacy positively affects solution's effectiveness. The study analyzed data collected from matched dyads of key informants in four global technology-enabled business process management solution providers and their customer firms.

Stancu and Hurduzeu (2020) made an empirical analysis on key obstacles customer solution providers in Romanian IT industry confront while offering successful solutions. By collecting a cross-sectional quantitative data from 10 managers (managing director, the customer sales director and the delivery director) of purposively selected 10 firms, the researcher found that relational processes(analysis/consulting related factors, design/configuration related factors, implementation/delivery related factors, support/operation related factors) are positively related to effective customer solution. The strength of this study is that it provides empirical evidence that supports positive relationship among relational processes and effective customer solution. Cross-sectional design fails to provide temporal effect of relational processes on the effectiveness of solution. Moreover, since the study is quantitative it calls for qualitative corroboration. Further, the study only considers solution suppliers as unit of analysis.

Based on a qualitative data from five Finland-based IT firms and their seven customer solution projects, Otra-Aho (2017) assessed project professionals' ability to create success criteria for customer solution projects based on supplier-customer interaction by employing service quality (SERVQUAL) framework and analytic hierarchy process method (AHP). The researcher identified that project-firms primarily focus on short-term measures such as delivery cost, cost per operational hour, and lead time. The researcher contends that 'the organization goals, success criteria goals and performance measures are loosely connected in customer solution project context'(p. 8).

The strength of the study is in that it provides insight on customer solutions in IT industry have a project nature. However, the study lies in that it doesn't provide quantitative measure to what extent criteria affect solution performance. Moreover, the study considers perspectives of informants from only solution supplier.

Through a qualitative analysis of data from 23 participants from both the German software vendor and customer SMEs, Bertram et al. (2016) identified four resources (customer business and market knowledge, customization management and experience data, product functionality and flexibility, and product related software development assets.) and six capabilities (business analysis and interpretation capability, customer integration and expectation management capability, requirements management and negotiation capability, future-proof solution design capability, solution deployment and initialization capability, and solution adjustment capability) needed in software product customization and their effect on use and exchange value for both software vendor and customer. Customer side informants (managing directors, chief technology officers, senior developers/consultants, project manager) represent various service or product business firms from utilities, finance, telecommunication, and aviation industry. The research shows strength by employing vendor-customer dyadic data. However, it is short of quantitatively demonstrating to what extent the resources and capabilities affect use value and exchange value of software vendors and customers.

2.4 Summary and Research Gap

Since RBT focusses on unique set of resources and capabilities, it doesn't provide the processes firms can employ to exploiting those resources and capabilities. As to value-in-use approach, there have not been instruments developed for collected empirical data. While empirical instrument is

developed for solution effectiveness model, its focus is on drivers of customer solution effectiveness and is not considered in this study.

Therefore, theoretical foundation of this study is based on Dynamic capability theory and process based approach. Dynamic capability theory provides necessary processes for firms to exploit their resources and competences. This enables firms to integrate, develop and reconfigure their resources and competences to match and address dynamic market environment (rapidly changing customer needs and competitions). Moreover, marketing innovation which is a dynamic capability has a well-tested instrument to collect empirical data.

The process based approach to customer solutions enables identification of client's solution requirements, customization and integration of solutions, their deployment, post-deployment support, and ensuring sustainability of solutions by updating according to evolving customer needs.

The review of literature on customer solution performance implies two important gaps. Despite customer solution performance is gaining increasing importance among scholars, empirical research on the construct is sparse. Empirical assessment of the construct from the perspective of the solution customer firms is also rare. Further, extant literature has not employed marketing innovation to explain customer solution performance.

2.5 Conceptual Framework

Customized offers are characteristic of business markets where business service providers develop tailored solutions for customers (Bertram et al., 2016; Siahtiri et al., 2020). Responding to dynamic customer needs is important for these firms as their customers require tailored solutions to their unique challenges (Siahtiri et al., 2020).

Building on the theoretical perspectives and empirical works on marketing innovation and solution performance, a study frame work links Marketing Innovation and Customer Solution Performance. The framework conceptualizes that marketing innovation leads to customer solution performance.

As depicted in Figure 1**Error! Reference source not found.**, Marketing Innovation is the key input to the conceptual framework. In this study, marketing innovation is a dynamic capability of ICT firms. Dynamic capability is required to provide solution (Saul and Gebauer, 2018) that enables fulfillment of dynamic customer needs (Chuwiruch et al., 2015) by addressing problems and needs in a noble way (Ungerman et al. 2018). Marketing innovation enables provision of customer solutions that fulfill their needs by implementing significant changes in marketing mix elements (OECD, 2005).

Customer solution performance represents the effectiveness of customer solution, that is, the extent to which solutions address customer desired outcomes (Powers et al., 2016; Tuli et al., 2007)**.** As successful solutions signify customer desired outcomes (Neely et al., cited in Fakhfakh, 2020).

Traditional offers (goods/services and product-service bundles) have inherent limitations such as inability to create unique customer value (Kleinaltenkamp et al., 2021), deficiency in supporting solution sustainability (Huang, 2018), and absence of provider-customer relationship (Penttinen & Palmer, cited in Stancu and Hurduzeu, 2020). Therefore, in addition to addressing this gaps, customer solution enables firms to fulfill their customers' business or operational needs (Stancu and Hurduzeu, 2020) by responding to dynamic business environment of changing customer needs and increasing competition (Berglund and Nilsson, 2020; Chuwiruch et al., 2015). Moreover, the

transition to customer solution provision, enables differentiation and widening sphere of competition (Macdonald et al., 2016).

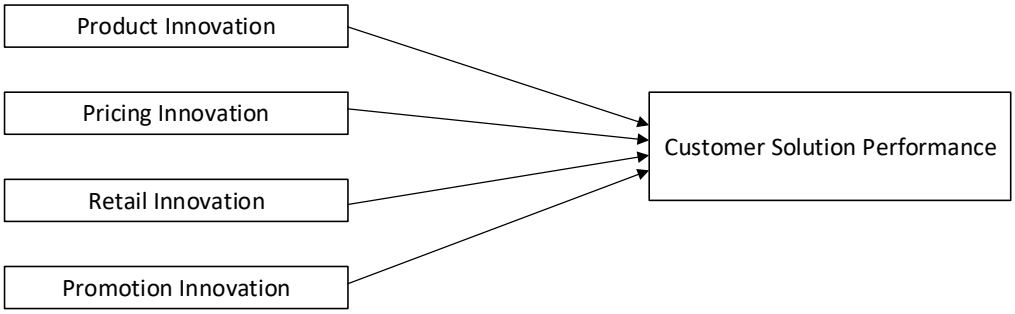

Figure 1: Conceptual Framework

Source: (Powers et al., 2016; Quaye and Mensah, 2019; Siahtiri et al., 2020)

In relation to the study objectives, this study explores the direct relationship between marketing innovation and customer solution performance. To measure the effect of the four independent variables on customer solution performance, the following four hypotheses were postulated.

H1: There is positive and significant effect of product innovation on customer solution performance.

H2: There is positive and significant effect of pricing innovation on customer solution performance.

H3: There is positive and significant effect of retail innovation on customer solution performance.

H4: There is positive and significant effect of promotion innovation on customer solution performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the context of the study, research approach, research design, study area study population, sample and sampling techniques, data collection procedures and instruments, method of data analysis, interpretation and presentation of findings, research reliability, validity, instrument variables and ethical considerations. The chapter also discusses why these research methods were used.

3.2 Description of the Study Area

This study is set in Addis Ababa. The location is selected because of the high concentration of ICT solution provider firms. Addis Ababa is also a primary ICT solutions market as it a seat for a large number of business firms (international, continental, sub-continental, diplomatic, federal, and regional institutions and business companies). So Addis Ababa is better suitable for collecting data from ICT solution customer firms.

3.3 Research Approach

The study utilized quantitative research approach which entails systematic empirical analysis (Quaye and Mensah, 2019). Quantitative research enables to test objective theories and obtain significant statistical result by examining the relationship among variables (Creswell and Creswell, 2018; Quaye and Mensah, 2019).

3.4 Research Design

This study used a descriptive cross-sectional survey design research as a strategy of enquiry to empirically characterize phenomena and explore associations between study variables (Creswell and Creswell, 2018; Quaye and Mensah, 2019). Moreover, since the design used questionnaire as an instrument to collect data from respondents on a particular topic at a specific point in time, survey design is economical and enables rapid turnaround in data collection (Creswell and Creswell, 2018). In order to provide explanation associations between study variables, the study also employed explanatory design (Creswell and Creswell, 2018).

3.5 Study Population and Sample

3.5.1 Unit of analysis

The unit of analysis of this study is comprised of solution customer firms. These firms purchase Information Communication Technology (ICT) solutions from software and ICT consultancy firms.

3.5.2 Target population

The target population of the study consists of all information technology solution customer firms based in Addis Ababa. ICT solution customer firms are business clients engaged in commerce, governmental or civic works and seek customized software solutions to enhance their business solutions.

These firms receive information technology solutions from information technology consultancy firms that are customized as per their pre-defined requirements and needs

3.5.3 Sampling frame

This study obtained the sampling frame indirectly. First, a list of 196 registered and licensed ICT firms based in Addis Ababa engaged in software development (design, enrichment, and implementation) and consultancy (software installation, commissioning and testing) was collected from Ministry of Innovation and Technology. After the list was filtered of redundant registers, an effective list of 148 firms was obtained. Thus, solution providers were randomly sampled from this list of 148 firms.

Then, the list of matched solution customer firms based in Addis Ababa was accessed from sampled solution providers (Pekkarinen, 2015; Yusuf, 2015). Provider firms were also asked to identify key informants in their solution customer firms who had the most knowledge about the solution provided (Yusuf, 2015).

3.5.4 Sampling design and technique

The study applied both a random sampling followed by purposive sampling techniques to select appropriate samples. Random sampling technique was chosen for selecting sample solution supplier firms because it provided an opportunity for each of the firms to be equally selected from the available sampling frame (Creswell and Creswell, 2018; Kothari and Garg, 2019). Thus, samples of solution providers was systematically selected from the sampling frame collected from the Ministry of Innovation and Technology and then filtered.

Purposive sampling was employed to select a matched solution customer firm for each solution provider (Pekkarinen 2015). Each solution customer was selected based on at least it is identified by the solution provider as a key customer, there was an ongoing supplier-customer

relationship for a reasonable period (Yusuf, 2015) and the firm received a customized solution (Bertram et al., 2016).

3.5.5 Sample size

Since the sample size for this study was based on finite population, it was determined based on the formula provided by Kothari and Garg (2019) as follows:

$$n = \frac{\frac{Z^2 p\,(1-p)}{e^2}}{1 + \left[\frac{Z^2 p\,(1-p)}{Ne^2}\right]}$$

Where:

- **n = size of sample.**
- **N = size of population.**
- $\mathbf{Z}^2$ = Degree of confidence in the estimation (here for 95% confidence level) = 1.96.
- **e** is the desired level of precision or the level of statistical significance set at 5%.
- **p** is the magnitude of the population proportion of the characteristics to be estimated in the population. Since **p** is unknown, the study heeds the recommendation that maximum variance of the sample proportion is assumed and **p** is taken as 0.5. Thus, q also becomes 0.5 (Verma and Verma, 2020).

$$\boldsymbol{n} = \frac{\frac{\mathbf{1.96} * \mathbf{0.5} * (\mathbf{1} - \mathbf{0.5})}{(\mathbf{0.05})^{\mathbf{2}}}}{\mathbf{1} + \left[\frac{\mathbf{1.96} * \mathbf{0.5}(\mathbf{1} - \mathbf{0.5})}{\mathbf{148} * (\mathbf{0.05})^{\mathbf{2}}}\right]} = 84\ firms$$

Therefore, the researcher collected data from 84 sample ICT solution customers that were referred by their matched solution provider firms.

3.6 Data Sources and Types

The study utilized both primary and secondary data. Primary data were collected from key informants from ICT solution customer firms. The choice of key informants from the firms is based on the recommendation that 'those who work in areas and have knowledge about the research topic could provide relevant information' (Hancok and Algozine, cited in Berglund and Nilsson, 2020; Yusuf, 2015). Accordingly, key informants in this study included one of general manager, project/program manager, technical manager, solution purchaser, or solution user. The secondary data wwere collected from Ministry of Information and Technology, scholarly journals, regulatory documents, policies and strategies.

3.7 Method, Instrument and Procedures of Data Collection

3.7.1 Method of data collection

Self-administered structured questionnaire was used to collect primary data (Quaye and Mensah, 2019). Structured questionnaire was chosen to enable respondents to provide relevant data. It is also relatively less expensive, time saving, and suitable for respondents to self-administer (Creswell and Creswell, 2018). Secondary data was collected through document review.

3.7.2 Instrument of data collection

The self-administered questionnaire had 31 items out of which 5 focused on respondent characteristics, 4 on firm characteristics, and 22 on study variables.

Antecedents of the study were individual dimensions of marketing innovation. The indicators for measuring marketing innovation in the proposed study were adopted from the work of Mensah (2019). The

indicators are multiple dimensions that measure the extent to which the solution provider has employed marketing innovation during solution provision. The study adopts 17 items for four dimensions of marketing innovation - 4 on product innovation, 4 on pricing innovation, 4 on retail innovation, and 5 on promotion innovation. The indicators measure marketing innovation on a 6-point Likert scales (1 = “Disagree very strongly” to 6 = “Agree very strongly”).

The indicators for measuring customer solution performance are adopted from the work of Powers et al. (2016). The indicators are multiple dimensions that assess the extent to which the solution provider understood and met client's requirements. The indicators also measure the extent to which solution customer understood their requirements are met. The study adopted 5 items for customer solution performance to capture provider/customer dyadic perspectives on client requirements, integration and customization, technical support service, and satisfaction. Solution performance items are measured on 7-point Likert scales (1 = “strongly disagree” to 7 = “strongly agree”).

In this study, firm characteristics such as industry type, firm size, age, and type were considered to characterize firm demographics (Powers et al., 2016; Siahtiri et al., 2020). Firm size was measured by the number of employees; age is the number of years the company had been established; firm ownership type was measured as wholly foreign owned, and international joint ventures (IJV) and domestic.

The demographic characteristic of key informants was captured by using 5 items on informants’ gender, age, educational level, job position and tenure.

3.7.3 Procedures of data collection

Before data collection, 15 solution customers were randomly selected and pretest was conducted on the study instrument. After pretest was conducted and the reliability of items was found satisfactory, copies of questionnaires equal in number to key sample informants were prepared, potential participants were approached and explained in-person about the purpose of the study. They were also asked for their consent to participate in the study. Those who were willing to participate in the study were provided with the questionnaire. Since the questionnaire was self-administered, informants filled their responses to questions. Then, completed questionnaires were collected.

3.8 Validity and Reliability

To evaluate the measurement models, estimates of reliability and validity were established.

3.8.1 Reliability

According to Creswell and Creswell (2018), reliability measures consistency and repeatability of constructs. Cronbach's Alpha (≥ 0.70) and Composite Reliability (≥.70) were employed to examine the internal consistency reliability of the measurement models (Hair et al., 2022; Ringle et al., 2019).

While Cronbach's Alpha values recorded 0.817 and higher, Composite Reliability values recorded 0.841 and higher. Results of reliability assessment showed that both Cronbach's Alpha and Composite Reliability achieved above threshold values (≥ 0.70) indicating that measurement models were reliable (Hair et al., 2022; Ringle et al., 2019).

3.8.2 Validity

Validity of the measurement models was tested by using convergent validity and discriminant validity. Convergent validity is an overall metric of a reflective measurement model that measures the extent to which the indicators of a construct converge (Hair et al., 2019). It was assessed by evaluating indicator reliability (≥ 0.50) and Average variance extracted (AVE ≥ 0.50) (Hair et al., 2022; Ringle et al., 2019). Discriminant validity evaluates the extent to which a construct is distinct from other constructs (Hair et al., 2019). Discriminant validity was examined by considering cross-loadings (standardized loading > cross-loadings) (Hair et al., 2022), Fornell-Lacker criterion (square root of AVE > highest correlation) (Fornell and Larcker, 1981), and Hetrotrait-monotrait (HTMT) ratio of correlations (Henseler et al., 2015). An HTMT value above 0.90 suggests a lack of discriminant validity.

Examination of convergent validity shows that 0.527 and higher were recorded on indicators reliability while 0.641 and higher were recorded on Average variance extracted (AVE). The results confirm that convergent validity is satisfied. Assessment of discriminant validity also shows that standardized loadings were above cross-loadings, square roots of AVE values were above highest correlation, and the maximum recorded HTMT value was 0.743 satisfying discriminant validity. Results of validity assessment showed that validity requirements of the measurement models were satisfactory (Hair et al., 2022; Ringle et al., 2019).

3.1 Method of Data Analysis and Presentation

IBM SPSS Statistic 21.0 and SmartPLS 4 (Version 4.0.9.1) were employed to analyze data. Tables, charts and models were used to present results of data analysis.

3.1.1 Data cleaning and preparation

After completed questionnaires were collected, data encoding and cleaning was performed to eliminate unengaged responses, outliers and replace missing data.

3.1.2 Descriptive analysis

Descriptive statistics of frequency, percentage, mean and standard deviation were applied to analyze demographic characteristics of respondents and firms (Quaye and Mensah, 2019; Yusuf, 2015).

3.1.3 Correlations analysis

A Pearson correlations analysis was conducted to explore the association between pairs of variables, i.e., between the independent and dependent variables (Kothari and Garg, 2019). A single number correlation coefficient that falls between -1 and +1 with a two tailed statistics at 95% level of significance was used (Kothari and Garg, 2019). Mean and standard deviation of construct was also assessed.

3.1.4 Partial Least Square Structural Equation Modeling

Structural Equation Modeling (SEM) was chosen for this study as it enabled the researcher to simultaneous examine of multiple variables, incorporate latent variables measured indirectly by indicators, and account for measurement error in observed variables (Hair et al., 2022; Ringle et al., 2019). The SEM in this study linked four dimensions of marketing innovation (antecedents) to customer solution performance (dependent variable).

Partial Least Square Structural Equation Modeling (PLS-SEM) was employed to assess the predictive capabilities of antecedents of the study.

PLS-SEM was selected for two critical reasons. First, for this business-to-business research, sample sizes limited and PLS-SEM is a suitable tool for research (Hair et al., 2022; Ringle et al., 2019; Sarstedt et al., 2021). Second, when the goal a research is to predict and explain a key target construct PLS-SEM is a good chioce (Sarstedt et al., 2021).

The measurement model was evaluated through individual indicator reliability, convergent validity, and discriminant validity. The structural model was assessed by employing explained variance (R^2), effect size (f^2), predictive relevance (Q^2), and the size and significance of the structural path coefficients (Hair et al., 2022; Ringle et al., 2019).

3.2 Ethical Considerations

In conducting the study, ethical issues were given proper due consideration before, during and after the research process. Before data collection process, the researcher obtained approval of research proposal and research support letter from the university. To obtain prior consent of the respondents, the researcher provided a brief description of the nature and purpose of the study and how data would be used before distributing questionnaires. During data analysis, the researcher promoted integrity and developed composite profiles to guarantee the privacy and anonymity of respondents. During report writing, the researcher documented multiple and/or contrary findings; reported honesty [of data, findings, and conclusions]; gave credit to other similar or related studies; and gave credit for ownership [of data] to researcher, respondents, and adviser[s].

CHAPTER FOUR
DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter with a focus on findings and analysis, covers response rate, descriptive analysis, correlations of control variables, exploratory factor analysis, structural equation modeling, and interpretation and discussion of results. The chapter also provides presentation of data or results with appropriates tools where appropriate.

4.2 Response Rate

To collect primary data, the researcher distributed a total of 100 questionnaires to the appropriate respondents from the sample solution customer firms. Out of 100 questionnaires, only 92 were returned. 5 out of 92 returned questionnaires were incomplete. 87 useable questionnaires were considered for the study. The effective response rate was 87%. This effective response rate is well above previous solution performance literatures that reported 60.71% (Yusuf, 2015) and 47.6% (Powers et al., 2016). The researcher randomly dropped three usable responses and used 84 completed questionnaires as per the sample size. The response rate is summarized in Table 1 below.

Table 1: Response rate

Description	Statistic
Sample selected	84
Questionnaires distributed	100
Questionnaires returned	92
Non-response	8
Incomplete questionnaires	5
Usable responses	**87**
Response rate (%)	**87**

Source: Solution Performance Field Survey, Tegegne Y. (2022)

After encoding the valid responses into SPSS, data were examined for multivariate outliers, and multivariate normality. Then, appropriate results were presented.

4.3 Descriptive Analysis

In this study, descriptive statistics was employed to analyze demographic characteristics respondents' and their firms, and descriptive statistics of scores on constructs.

4.3.1 Respondent Characteristics

This section of the study presents a descriptive statistics of respondents' demographic characteristics, such as gender, age, level of education, current job position and tenure in the current firm. Table 2 below presented demographic characteristics of the respondents who participated in the study.

Table 2: Demographic characteristics of respondents

Respondent Characteristics		Respondent Statistic	
		Frequency	Percentage (%)
Gender	Female	36	43%
	Male	48	57%
	Total	**84**	**100**
Age [years]	20-30	41	49%
	31-40	38	45%
	41-50	5	6%
	>50	0	0
	Total	**84**	**100**
Education	Diploma	0	0
	Degree	58	69%
	Masters	26	31%
	Ph.D.	0	0
	Total	**84**	**100**

Job position	G/Manager	0	0%
	Project/Program Manager	7	8%
	Technical Manager	15	18%
	Solution Purchaser	9	11%
	Solution User	53	63%
	Total	**84**	**100**
Tenure [Years]	<1	0	0
	1-3	24	29%
	4-10	60	71%
	≥10	0	0
	Total	**84**	**100**

Source: Solution Performance Field Survey, Tegegne Y. (2022)

As Table 2 above depicts, 36 (43%) females and 48 (57%) males participated in the study. The analysis revealed that out of 84 study respondents, the majority that represent 57 % were males.

The table also reveals that in terms age group, respondents that represented 49% fall within age group of 20-30. Those that represented 45% fall within age group of 31-40. The remaining respondents that represented 6% fall within age group of 41-50 respectively. The table records no participants above the age of 50. The analysis implies that majority of the respondents that represents 94% fall within 20-40 years of age which is a productive age.

Regarding educational level, the study participants have attained bachelor's degree or master's degree level. The table above shows that 58 (69%) who have attained first degree and 26 (31%) who hold masters participated in the study. Analysis of study participants' educational level from the sample firms demonstrated that all participants have formal university level education. The majority of these respondents that represent 69% have attained first degree.

On job position, Table 2 above shows that among study participants were 17 (8%) project/program managers, 15 (18%) technical mangers, 9 (11%) solution purchasers, and 53 (63%) solution users. Analysis of study participants' current job position depicted that the majority (63%) were solution users.

With respect to participants' tenure, 24 (29%) study participants have worked on their current position for 1-3 years while 60 (71%) have worked for 4-10 years on their current job position. The table records no participant with tenure of below 1 year and above 10 years. Analysis of study participants' tenure depicted that the majority of study participants that cover 71% have worked on their current position for 4-10 years.

4.3.2 Firm Characteristics

This section of the study presents a descriptive statistics on demographic characteristics of firms represented by study participants, such as firm age, firm size, ownership type and industry. Table 3 below presents demographic characteristics of firms represented by respondents who participated in the study.

Table 3: Demographic characteristics of firms

Firm Characteristics		Firm Statistic	
		Frequency	Percentage (%)
Age	≤5	21	25%
	6-10	23	27%
	11-15	29	35%
	≥16	21	25%
	Total	**100**	**100.0**
Size (Mean)	**No. Employees**	**565**	
Ownership Type	Foreign	0	0.0
	Joint venture	0	0.0
	Domestic	84	100.0
	Total	**84**	**100.0**
	Academia	7	8%
	Banking	6	7%

Industry Type	Export & Import	21	25%
	Healthcare	11	13%
	Hotel & Tourism	20	24%
	Insurance	4	5%
	Trans & Log	15	18%
	Total	**84**	**100.0**

Source: Solution Performance Field Survey, Tegegne Y. (2022)

Table 3 above reveals respondents represented 21 (25%) solution customer firms that were ≤5 years of age. Respondents also represented 23 (27%) solution customer firms that fall within 6-10 age group. Among the solution customer firms the study respondents represented, that constitute 29 (35%) fall within age group 11-15. 21 (25%) solution customer firms were ≥16 years of age. Analysis of firm characteristics with respect to age revealed that there is a balanced representation of firms from each age group. The mean size of the firms was 565 employees. Regarding firm ownership type, all the solution customers were domestic firms.

The sample firms represented several commercial firms, with 7 (8%) from academia, 6 (7%) from banking, 21 (25%) from export-import, 11 (13%) from healthcare, 20 (24%) from hotel and tourism, 4 (5%) from insurance, and 15 (18%) from transport and logistics. The analysis on the industry types represented by study participants reveals that the study covers solution customers from diverse sectors.

4.4 Correlations Analysis

Mean and standard deviation scores. on the survey items were summarized and presented in **Error! Reference source not found.**. The responses were the study participants' levels of agreements on the level of marketing innovation that was incorporated in the ICT solution firms received from their respective solution providers, and on the performance of the solution.

The summaries revealed that for marketing innovation indicators measured on 6-point scale, the mean values and standard deviation (SD) recorded were from 4.13 to 4.43 and from 0.65 to 0.80 respectively. The modest mean scores indicated that marketing innovation was incorporated in the ICT solutions that customer firms had received from their respective solution providers. For customer solution performance indicators measured on 7-point scale, the mean score recorded was 4.71 with standard deviation of 0.88. The mean value scored was modest meaning that solutions received by the customer firms had demonstrated acceptable level of performance. For detail result on measured items see Appendix B on pages 83 this report.

Table 4: Correlations Analysis

Constructs		**1**	**2**	**3**	**4**	**5**
1	Product innovation					
2	Pricing innovation	.566**				
3	Retail Innovation	.382**	.478**			
4	Promotion innovation	.613**	.482**	.362**		
5	Solution Performance	.409**	.454**	.411**	.361**	
Mean		*4.43*	*4.24*	*4.13*	*4.34*	*4.71*
SD		*0.65*	*0.71*	*0.80*	*0.67*	*0.88*

**. Correlation is significant at the 0.01 level (2-tailed).

A correlation coefficient is a very useful indicator to identify the relationship between the independent and dependent variables (Kothari and Garg, 2019). A Pearson to correlation was used explore the association marketing innovation constructs and solution performance construct, while controlling for scores on firm age, firm size, industry type, market dynamism, and competition.

Medium to strong, positive, significant correlation was recorded between solution performance, pricing innovation, retail innovation, and promotion innovation, with insignificant correlation between solution performance and product innovation.

4.5 Structural Equation Modeling

This section covers an assessment to determine whether the theory (Structural model) explains the data collected using the study variables (Measurement models). The assessment was conducted by following a three-stages path model analysis recommended by Hair et al. (2022). The stages include path model specification, path model estimation, and path model evaluation.

4.5.1 Path Model Specification

Model specification provides the definition of individual constructs based on the conceptual framework of the study. A path model is a diagram that connects constructs based on theory to visually display the hypotheses that will be tested.

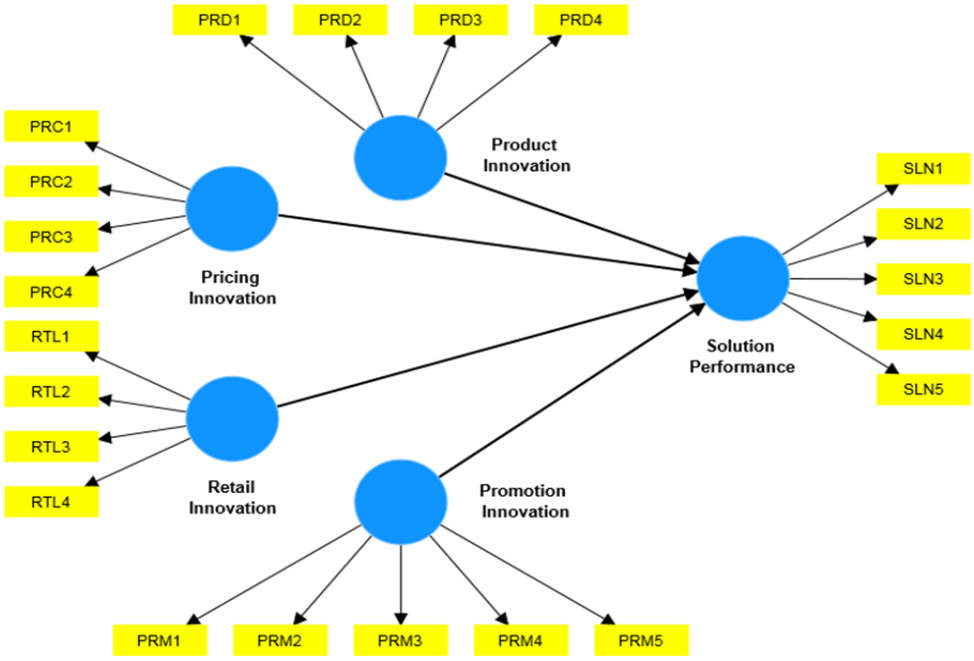

Figure 2: Path model

This study provided five constructs: product innovation, pricing innovation, retail innovation, promotion innovation and customer solution

performance. The five constructs had a total of twenty-two (22) reflective indicators. The path model depicted in above Figure 2 above is based on the conceptual framework of the study. The figure illustrates the research hypotheses and displays the variable relationships that will be examined.

4.5.1.1 Specifying structural model

The structural model (also called the inner model in PLS-SEM), describes the relationships between the latent variables (Hair et al., 2022). As theoretically suggested by the conceptual framework, the structural model provides the sequence of the constructs and the relationships between them (See yellow circles in Figure 2 above). Based on theory, the sequence of the constructs in a structural model, is displayed from left to right, with independent (predictor) constructs on the left and dependent (outcome) variables on the right-hand side.

Independent variables are referred to as exogenous latent variables and are on the very left side of the structural model. Exogenous latent variables only have arrows that point out of them and never have arrows pointing into them. Dependent variables in a structural model (i.e., those that have an arrow pointing into them) are called endogenous latent variables and are on the right side of the structural model.

In Figure 2 above, constructs located on the right side of the path model namely product innovation, pricing innovation, retail innovation, and promotion innovation are independent and thus are exogenous latent variables. The construct located on the right side of the path model, customer solution performance is independent and thus endogenous latent variable.

The relationships between the constructs is established by drawing arrows. The arrows are inserted with the arrow pointed to the right. This approach indicates the sequence and that the constructs on the left predict the constructs on the right side. Thus, the structural model assesses the model's predictive capabilities and the relationship that exists constructs.

4.5.1.2 Specifying measurement models

While the structural model describes the relationships between latent variables (constructs), the measurement models represent the relationships between constructs and their corresponding indicator variables (generally called the outer models in PLS-SEM) (Hair et al., 2022).

The path model shown in Figure 2 above has four exogenous constructs—product innovation, pricing innovation, retail innovation, and promotion innovation—and one endogenous construct, which is customer solution performance. Each of these constructs is measured is measured indirectly by means of multiple indicators and for that reason is referred to as a latent variable. The constructs product innovation, pricing innovation, and retail innovation each have 4 indicators, while constructs promotion innovation, and customer solution performance each have 5 indicators.

As the direction of the arrows goes from the construct to the indicators, this type of measurement model is referred to as reflective. In reflective measurement model, indicators represent the effects (or manifestations) of an underlying construct. Therefore, causality is from the construct to its measures.

4.5.2 Path Model Estimation

The data satisfied the minimum sample size for PLS path model estimation of at least meet the 10 times rule (Hair et al., 2022). Based on the 10 times rule, a sample size of at least 10 times the maximum number of indicators of a specific construct is sufficient.

The maximum number of indicators of a specific construct is 5, which implies that a sample size of at least 50 is satisfactory to run PLS-SEM algorithm. This study utilized 84 responses. The data were changed to file format that is suitable to PLS-SEM algorithm which is CSV (comma delimited) format.

4.5.2.1 PLS-SEM algorithm settings

To estimate a PLS path model, algorithmic options and parameter settings required to run the PLS-SEM algorithm were selected. Accordingly, path weighting scheme as the weighting method was select, +1 was used as the initial value for all outer weights, a stop criterion of $1*10^{-7}$ (i.e., 0.0000001) was chosen, and a value of 3,000 for the maximum number of iterations was selected (Hair et al., 2022).

To test the significance of outer loadings, and path coefficients, a nonparametric complete, bias corrected and accelerated (BCa) bootstrap procedure with 5,000 bootstrap samples, and 0.05 two-tailed significance level was conducted.

Predictive relevance of endogenous construct was examined using the blindfolding procedure based on cross-validated redundancy approach with omission distance (D) of nine (9).

4.5.2.2 Estimation results

After the PLS algorithm converges, the model generates estimation results in graphical, matrix, and list formats. The algorithm provides estimation results on path coefficients, outer loadings, and quality criteria that include reliability, validity, standardized path coefficients, coefficients of determination (R^2 values), the f^2 effect size, predictive relevance (Q^2 value), the q^2 effect size, and collinearity statistics.

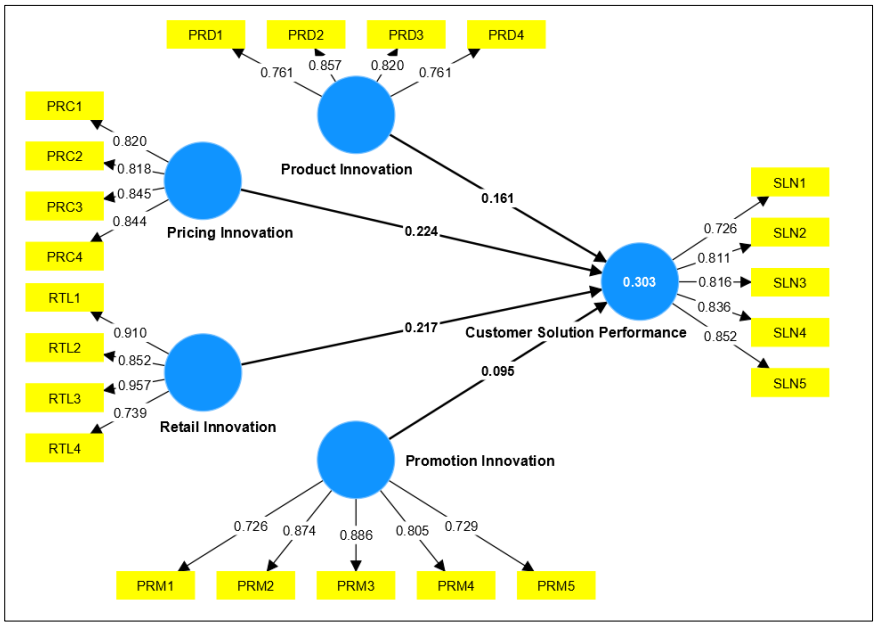

Figure 3: Path Model PLS results

Results on standardized outer loadings, reliability, and validity, are attributed to measurement (outer) models. Standardized path coefficients, path coefficients, coefficients of determination (R^2 values), the effect size (f^2 value), predictive relevance (Q^2 value), and collinearity statistics measure the structural (inner) model.

Figure 3 above shows Path model PLS graphical output results after the PLS algorithm converges.

Assessments of the results of measurement models and structural model are presented in the path model evaluation section that follows.

4.5.3 Path Model Evaluation

4.5.3.1 Assessing results of measurement models

The goal of measurement model assessment is to ensure the reliability and validity of the construct measures. The significance of measurement model assessment values was determined by computing the empirical standard error (t) values and p values by means of a bootstrapping procedure at a critical value of 1.96 and a two-tailed significance level of 5%.

Prior to application of PLS-SEM for measurement and structural model assessment, the data were examined through IBM SPSS 21.0 and PLS-SEM 4 for outliers, normality, and multicollinearity. Particularly, the evaluating the data and results for significant outliers and collinearity is critical as these issues influence the ordinary least squares regressions in PLS-SEM (Hair et al., 2019).

Assessment of multivariate outliers

An outlier is an extreme response to a particular question, or extreme responses to all questions (Hair et al., 2022). Mahalanobis distance ($p < .001$) was used as the criterion for examining presence of multivariate outliers in the data. Mahalanobis distance is evaluated as D^2 divided with degrees of freedom (f) equal to the number of variables, in this case five (5): Product Innovation, Pricing Innovation, Retail Innovation, Promotion Innovation, and Customer Solution Performance.

To detect the presence of multivariate outliers for small samples, a threshold value of 2.5 ($D^2/f \leq 2.5$) is used (Hair et al., 2019). The data for this study recorded minimum and maximum Mahalanobis distance of, respectively, 0.318 and 10.830 (See a row highlighted grey in **Error! Reference source not found.** below). Accordingly, a value of 2.166 (10.830/5 = 2.166) is achieved. The 2.166 value, which is below the threshold value of 2.5, indicates that multivariate outlier is not an issue in this study.

Table 5: Multivariate outlier statistics

Residuals Statistics[a]					
	Min.	Max.	Mean	STDV	N
Predicted Value	3.5924	5.8493	4.7143	.46780	84
Std. Predicted Value	-2.398	2.426	.000	1.000	84
Standard Error of Predicted Value	.096	.288	.181	.046	84
Adjusted Predicted Value	3.5303	5.9410	4.7148	.47138	84
Residual	-2.30454	1.82211	.00000	.74591	84
Std. Residual	-3.014	2.383	.000	.976	84
Stud. Residual	-3.041	2.460	.000	1.004	84
Deleted Residual	-2.34497	1.94198	-.00047	.79033	84
Stud. Deleted Residual	-3.215	2.544	-.003	1.022	84
Mahal. Distance	.318	10.830	3.952	2.443	84
Cook's Distance	.000	.107	.012	.019	84
Centered Leverage Value	.004	.130	.048	.029	84
a. Dependent Variable: Customer Solution Performance					

Assessment of normality

Skewness and kurtosis were used to assess to what extent the data deviate from normality (Hair et al., 2022). Skewness assesses the extent to which a variable's distribution is symmetrical while kurtosis is a measure of whether the distribution is too peaked (a

very narrow distribution with most of the responses in the center). As Table 6 below provides, the kurtosis values recorded between -.618 and 0.531. The skewness values also recorded between -0.365 and 0.407. Both the kurtosis and skewness values of the indicators are within the –2 and +2 acceptable range (Hair et al., 2022). Therefore, non-normality of data regarding skewness and kurtosis is not an issue.

Table 6: Assessment of Normality

	Median	Observed min.	Observed max.	STDV	Excess kurtosis	Skewness
Solution Performance	0.066	-2.895	2.386	1	0.531	-0.365
Pricing Innovation	0.164	-2.132	2.192	1	-0.618	-0.11
Product Innovation	-0.067	-2.165	2.15	1	-0.43	0.139
Promotion Innovation	-0.076	-1.946	2.395	1	-0.108	0.407
Retail Innovation	-0.184	-2.389	2.346	1	-0.047	0.256

Examining construct reliability

To be evaluate internal consistency reliability, the researcher considered Cronbach's Alpha and Composite Reliability (Hair et al., 2022).

Table 7**Error! Reference source not found.** below shows Cronbach's alpha statistics matrix of the research constructs. The results presented reveal that Cronbach's alpha values for all constructs recorded 0.817 and higher which is well above the critical threshold of 0.70.

Table 7: Cronbach's Alpha

Construct	Cronbach's Alpha	t statistics	p values	95% Confidence Intervals
Solution Performance	0.868	31.745	0.00	[0.802, 0.910]
Pricing Innovation	0.852	35.504	0.00	[0.796, 0.890]
Product Innovation	0.817	27.264	0.00	[0.748, 0.865]
Promotion Innovation	0.866	35.015	0.00	[0.808, 0.904]
Retail Innovation	0.888	43.526	0.00	[0.842, 0.921]

Composite reliability values of the latent constructs of the study are shown in Table 8 below. The values reveal that all constructs recorded composite reliability values of 0.841 or higher, which is well above the critical threshold of 0.70 on composite reliability.

Table 8: Composite Reliability

Construct	Composite reliability	t values	p values	95% Confidence Intervals
Solution Performance	0.871	31.745	0.000	[0.779, 0.908]
Pricing Innovation	0.859	35.504	0.000	[0.780, 0.898]
Product Innovation	0.841	27.264	0.000	[0.662, 0.930]
Promotion Innovation	0.884	35.015	0.000	[0.637, 0.934]
Retail Innovation	0.904	43.526	0.000	[0.836, 0.934]

The results reported for examining construct reliability suggest that acceptable internal consistency reliability of the measurement models is achieved (Hair et al., 2022; Ringle et al., 2019). Moreover, t values recorded are above the critical value of 1.96 and are significant ($p < 0.00$). Farther, confidence intervals suggest that the coefficient estimates are stable (Hair et al., 2022).

Examining convergent validity

To evaluate convergent validity of the constructs, the researcher considered the reliability of individual indicators and the average variance extracted (AVE) (Hair et al., 2022).

Table 9**Error! Reference source not found.** below present's average variance extracted (AVE) values of the constructs of the measurement model. The values reveal that all reflectively measured constructs have AVE values of 0.641 (Product Innovation) or higher, which is considerably above the threshold value of 0.5.

Table 9: Average Variance Extracted

	AVE	t values	p values	95% Confidence Intervals
Solution Performance	0.655	13.976	0.000	[0.553, 0.736]
Pricing Innovation	0.692	20.193	0.000	[0.620, 0.753]
Product Innovation	0.641	15.543	0.000	[0.560, 0.715]
Promotion Innovation	0.651	12.960	0.000	[0.545, 0.728]
Retail Innovation	0.754	22.956	0.000	[0.688, 0.814]

Table 10 below presents a matrix of standardized outer loadings indicator (highlighted **bold**) and cross-loadings. Looking at the indicator reveals that all indicators of the reflective constructs recorded loadings of 0.726 and higher which suggests sufficient levels of indicator reliability (>0.50). The indicators PRM5 and SLN1 (outer loading: 0.726) have the smallest indicator reliability with a value of 0.527 (0.726^2), while the indicator RTL1 (outer loading: 0.910) has the highest indicator reliability, with a value of 0.828 (0.910^2).

Table 10: Indicator Outer Loadings and Cross-Loadings

	Solution Performance	Pricing Innovation	Product Innovation	Promotion Innovation	Retail Innovation	t values	p values	95% Confidence Intervals
PRC1	0.368	**0.820**	0.488	0.360	0.520	15.00	0.000	[0.694, 0.893]
PRC2	0.346	**0.818**	0.417	0.455	0.265	14.00	0.000	[0.684, 0.892]
PRC3	0.390	**0.845**	0.453	0.391	0.258	18.70	0.000	[0.762, 0.908]
PRC4	0.443	**0.844**	0.495	0.457	0.558	17.21	0.000	[0.732, 0.910]
PRD1	0.234	0.502	**0.761**	0.480	0.294	9.87	0.000	[0.557, 0.864]
PRD2	0.312	0.483	**0.857**	0.564	0.295	15.46	0.000	[0.725, 0.923]
PRD3	0.431	0.338	**0.820**	0.505	0.333	13.56	0.000	[0.663, 0.907]
PRD4	0.340	0.522	**0.761**	0.444	0.302	9.230	0.000	[0.523, 0.870]
PRM1	0.318	0.300	0.347	**0.726**	0.207	9.610	0.000	[0.533, 0.821]
PRM2	0.380	0.421	0.557	**0.874**	0.290	19.56	0.000	[0.809, 0.917]
PRM3	0.332	0.353	0.501	**0.886**	0.341	16.25	0.000	[0.791, 0.931]
PRM4	0.180	0.400	0.519	**0.805**	0.302	11.36	0.000	[0.651, 0.876]
PRM5	0.282	0.567	0.599	**0.729**	0.358	9.310	0.000	[0.519, 0.827]
RTL1	0.367	0.479	0.381	0.293	**0.910**	35.30	0.000	[0.844, 0.944]
RTL2	0.386	0.389	0.362	0.369	**0.852**	20.86	0.000	[0.740, 0.907]
RTL3	0.411	0.484	0.339	0.326	**0.957**	58.14	0.000	[0.910, 0.974]
RTL4	0.298	0.338	0.244	0.287	**0.739**	11.55	0.000	[0.575, 0.830]
SLN1	**0.726**	0.276	0.374	0.425	0.428	9.59	0.000	[0.522, 0.833]
SLN2	**0.811**	0.471	0.376	0.259	0.397	18.33	0.000	[0.707, 0.874]
SLN3	**0.816**	0.398	0.381	0.327	0.292	18.95	0.000	[0.707, 0.876]
SLN4	**0.836**	0.257	0.275	0.285	0.286	14.08	0.000	[0.658, 0.906]
SLN5	**0.852**	0.453	0.301	0.26	0.281	16.25	0.000	[0.721, 0.916]

The results of indicator reliability and AVE assessments suggest that the convergent validity requirements are satisfied (Hair et al., 2022; Ringle et al., 2019). Moreover, t values recorded are above the critical value of 1.96 and are significant ($p < 0.50$). Farther, confidence intervals suggest that the coefficient estimates are stable (Hair et al., 2022).

Examining discriminant validity

Discriminant validity was examined by considering Hetrotrait-monotrait (HTMT) ratio of correlations (HTMT < 0.90) (Henseler et al., 2015), Fornell-Lacker criterion (square root of AVE > highest correlation) (Fornell and Larcker, 1981), and cross-loadings (standardized loading > cross-loadings) (Hair et al., 2022).

Examination of discriminate validity in Table 10 above shows each indicator's loading on its assigned construct is higher than all of its cross-loadings with other constructs. The fact that standardized loadings recorded above cross-loadings with other constructs supports for establishment of the reflective constructs' discriminant validity.

Table 11 below shows a matrix of HTMT values for all pairs of constructs. HTMT estimates the true correlation between two constructs if they were perfectly measured (i.e., if they were perfectly reliable) (Hair et al., 2019). As can be seen, the maximum recorded HTMT value is 0.743. Therefore, all HTMT values are clearly lower than the threshold value of 0.90 suggesting that all constructs in the model measurement models exhibit discriminant validity based on the HTMT requirement. The table also shows that neither of the lower (2.5%) and upper (97.5%) bounds of the 95% (bias-corrected and accelerated) confidence intervals includes the value 1 suggesting that the bootstrap confidence interval results of the HTMT criterion also support the discriminant validity of the constructs.

Table 11: Hetrotrait-monotrait ratio (HTMT) Matrix

Correlation	HTMT	95% Confidence Intervals
Pricing Innovation ↔ Solution Performance	0.529	[0.325, 0.712]
Product Innovation ↔ Solution Performance	0.478	[0.261, 0.672]
Product Innovation ↔ Pricing Innovation	0.686	[0.522, 0.818]
Promotion Innovation ↔ Solution Performance	0.423	[0.229, 0.623]
Promotion Innovation ↔ Pricing Innovation	0.588	[0.420, 0.723]
Promotion Innovation ↔ Product Innovation	0.743	[0.563, 0.872]
Retail Innovation ↔ Solution Performance	0.472	[0.293, 0.631]
Retail Innovation ↔ Pricing Innovation	0.551	[0.364, 0.701]
Retail Innovation ↔ Product Innovation	0.446	[0.206, 0.663]
Retail Innovation ↔ Promotion Innovation	0.424	[0.203, 0.621]

Table 12 below shows the results of the Fornell-Larcker criterion assessment with the square root of the reflective constructs' AVE on the diagonal and the correlations between the constructs in the off-diagonal position. Reviewing the Fornell-Larcker criterion suggests that the constructs discriminate well because the square root of the AVE of each reflective construct (shown on the diagonal) is larger than the correlations with the remaining constructs in the model.

Table 12: Fornell-Lacker Criterion

		1	2	3	4	5
1	Solution Performance	**0.809**				
2	Pricing Innovation	0.468	**0.832**			
3	Product Innovation	0.429	0.559	**0.801**		
4	Promotion Innovation	0.387	0.501	0.622	**0.807**	
5	Retail Innovation	0.424	0.49	0.385	0.368	**0.868**

The results of HTMT, Fornell-Lacker criterion, and cross-loadings assessments provide evidence for the constructs' discriminant validity (Hair et al., 2022; Ringle et al., 2019). Moreover, t values recorded are above the critical value of 1.96 and are significant ($p < 0.05$). Farther, confidence intervals suggest that the coefficient estimates are stable (Hair et al., 2022).

4.5.3.2 Assessing of structural model results

After the measurement model assessment found satisfactory, the step that follows in evaluating PLSSEM results is assessing the structural model. Examining the structural model results enables the researcher to determine the model's capability to predict target construct.

In order to evaluate the predictive quality of the structural model, results of collinearity statistics of exogenous constructs, standardized path coefficients, coefficients of determination (R^2 values), f^2 effect size, predictive relevance (Q^2 value), and q^2 effect size were examined.

To determine the significance of the structural model assessment results, bootstrapping was applied using the conservative no-sign-change option, and 95% confidence intervals (Hair et al., 2022, 2019). The corresponding empirical t-value is the quotient of the path coefficient and the standard error of the bootstrapped variable (which equals the standard deviation in the case of bootstrapping); t-values larger than 1.96 indicate significance on the $p < .05$ level.

The predictive relevance (Q^2) of the model was obtained by using blindfolding procedure which is a sample reuse technique that omits data points in an endogenous variable and tries to

approximate those artificially missing values using the model estimates (Hair et al., 2019).

Assessment of collinearity

Prior to the examination of the results, all endogenous latent variables that serve as predictors in the model (Product Innovation, Pricing Innovation, Retail Innovation, and Promotion Innovation) were tested for collinearity issues.

Collinearity was examined to make sure that it does not bias the regression results that are important to derive structural model coefficients for the relationships between the constructs (Ringle et al., 2019).

Collinearity happens when two or more predictor variables correlate at high levels ($r \geq 0.9$) with one another, or when one independent variable is a near linear combination of other independent variables (Kothari and Garg, 2019; Tabachnick et al., 2019).

Collinearity was assessed by using Variance inflation factor (VIF). which involves computing each item's variance inflation factor (VIF) by running a multiple regression of each indicator in the measurement model of the formatively measured construct on all the other items of the same construct (Sarstedt et al., 2021). In the context of PLS-SEM, a tolerance value of 0.20 or lower and a VIF value of 5 and higher respectively indicate a potential collinearity problem (Hair et al., 2022).

To check the structural model for collinearity issues, the VIF values of all sets of predictor constructs in the structural model were examined. The result of collinearity diagnostics, performed

by using SmartPLS 4. Table 13 shows the VIF values of all the endogenous constructs and corresponding exogenous constructs.

The reported VIF values range from 1.597 to 3.564. As can be seen in Table 13, all VIF values are clearly below the threshold of 5.00. Therefore, collinearity among the predictor constructs is not a critical issue in the structural model (Hair et al., 2022; Ringle et al., 2019).

Table 13: VIF Values in the Structural Model

Predictors	VIF (Inner Values)
Product Innovation	3.564
Pricing Innovation	2.196
Retail Innovation	1.597
Promotion Innovation	2.489

Assessment of Structural Model Path Coefficients

Structural model path coefficients are estimates of the structural model relationships model (i.e., between the constructs in the model) which represent the hypothesized relationships among the constructs that are derived from estimating a series of regression equations (Hair et al., 2022, 2019; Ringle et al., 2019). Estimated path coefficients close to +1 represent strong positive relationships (and vice versa for negative values) that are usually statistically significant (i.e., different from zero in the population). The closer the estimated coefficients are to 0, the weaker are the relationships (Hair et al., 2022).

Path estimates obtained after running the PLS-SEM algorithm are evaluated for their significance and size. To test the significance of path coefficients, empirical t values and p values were computed

for all structural path coefficients following bootstrapping procedure. The bootstrap confidence interval was also considered to test whether a path coefficient is significantly different from zero. Table 14 below shows the PLS-SEM results of model path coefficients, t values, significance levels (p values), and 95 percent confidence intervals.

Table 14: Model Path Coefficients

Path			Path coefficients	t values	p values	95% Confidence Intervals
Product Innovation	→	Solution Performance	0.161	1.436	0.15	[-0.075, 0.367]
Pricing Innovation	→	Solution Performance	0.224	1.701	0.09	[-0.057, 0.473]
Retail Innovation	→	Solution Performance	0.217	2.053	0.04	[0.007, 0.419]
Promotion Innovation	→	Solution Performance	0.095	0.93	0.35	[-0.142, 0.270]

Table 14 above shows that moderate to low path coefficients are recorded. From the table we can see that among the four exogenous driver constructs, Pricing Innovation has the strongest effect on Customer Solution Performance (0.224), followed by Retail Innovation (0.217), Product Innovation (0.161), and Promotion Innovation (0.095).

Looking at the relative importance of the exogenous constructs for the Customer Solution Performance, one finds that the ICT solution customers' perception of the provider's Pricing Innovation is the most important, followed by provider's Retail Innovation. In contrast, the perceived Product Innovation and Promotion Innovation have very little bearing on the perceived Solution Performance.

However, examination of the path coefficients for the significance the relationships indicates that only the path coefficient between Retail Innovation and Solution Performance (H_3: Retail Innovation → Customer Solution Performance) is statistically significant ($\beta = 0.217$; $t = 2.053$; $p = 0.04$). Therefore, assuming a 5% significance level, only one hypothesis (H_3) is supported.

The fact that the path coefficient of the relationship between exogenous construct and endogenous construct is statistically significant (i.e., the coefficient is significantly different from zero in the population), suggests that its value indicates the extent to which exogenous construct is associated with the endogenous construct (Hair et al., 2019). Accordingly, one-unit change Retail Innovation construct changes the Customer Solution Performance construct by the size of the path coefficient ($\beta = 0.217$) when everything else (i.e., all other constructs and their path coefficients) remains constant.

These results suggest that ICT solution provider firms should concentrate their marketing efforts on enhancing their retail innovation rather than other marketing to maximize the performance of the solutions the provided to their customers.

Assessment of Coefficient of Determination

The coefficient of determination (R^2 value) measures the variance, which is explained in each of the endogenous constructs and is therefore a measure of the model's explanatory power calculated as the squared correlation between a specific endogenous construct's actual and predicted values (Shmueli and Koppius in Ringle et al., 2019).

The coefficient represents the exogenous latent variables' combined effects on the endogenous latent variable. That is, the coefficient represents the amount of variance in the endogenous construct(s) explained by all of the exogenous constructs linked to it. Because the R^2 is the squared correlation of actual and predicted values and, as such, includes all the data that have been used for model estimation to judge the model's predictive power, it represents a measure of in-sample predictive power (Hair et al., 2022; Ringle et al., 2019).

The R^2 estimate obtained after running the PLS-SEM algorithm is evaluated for its size and significance. The R^2 value ranges from 0 to 1, with higher levels indicating higher levels of predictive accuracy. As a guideline, R^2 values of 0.75, 0.50 and 0.25 can be, be respectively, considered as substantial, moderate and weak (Hair et al., 2022; Ringle et al., 2019).

To test the significance of R^2, empirical t value and p value were computed for the coefficient following bootstrapping procedure. The bootstrap confidence interval was also considered to test whether the coefficient of determination is significantly different from zero. Table 15 below presents the PLS-SEM result of R^2, t value, significance level (p values), and 95 percent confidence interval.

Table 15: Coefficient of Determination (R^2)

	R^2	t value	p value	95% Confidence Interval
Solution Performance	0.303	4.159	0.000	[0.151, 0.398]

As Table 15 above shows, a coefficient of determination of 0.303 is recorded for the dependent construct of the study. Following the guideline on the size of R^2, the R^2 value of the endogenous latent

variable Solution Performance (0.303) can be considered moderate. This indicates the percentage of the total variance in the indicators of the dependent construct is 30.3 percent.

Examination of the Coefficient of Determination for significance indicates that at the 5% probability of error level zero does not fall into the 95% percentile confidence interval. Moreover, the t value ($t = 4.159$) is above the critical value of 1.96. Therefore, assuming a 5% significance level, we find that coefficient of determination of the structural model is significant ($p < 0.05$).

Assessment of Effect Size f^2

The f^2 effect assesses how the removal of a certain predictor construct affects an endogenous construct's R^2 value.

The f^2 effect sizes obtained after running the PLS-SEM algorithm are evaluated for their size and significance. Guidelines for assessing f^2 are that values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects (Cohen, 1988). Effect size values of less than 0.02 indicate that there is no effect.

To test the significance of f^2, empirical t value and p value were computed for the values following bootstrapping procedure. The bootstrap confidence interval was also considered to test whether the f^2 values are significantly different from zero. Table 16 below shows the PLS-SEM result of f^2 values, t values, significance level (p values), and 95 percent confidence interval.

Table 16: f^2 Effect Sizes

Path			f^2	t values	p values	95% Confidence Intervals
Product Innovation	→	Solution Performance	0.042	0.692	0.489	[-0.243, 0.111]
Pricing Innovation	→	Solution Performance	0.020	0.564	0.573	[-0.373, 0.079]
Retail Innovation	→	Solution Performance	0.007	0.332	0.740	[-0.395, 0.110]
Promotion Innovation	→	Solution Performance	0.050	0.877	0.380	[-0.185, 0.098]

Examination of the removal of Product Innovation, Pricing Innovation, Retail Innovation, and Promotion Innovation, in turn, respectively, provides f^2 values of 0.042, 0.020, 0.007, and 0.050. Based on guidelines for assessing f^2 and values of f^2 recorded Table 16 above, evaluation of the sizes of f^2 reveals that Product Innovation (0.042) and Promotion Innovation (0.050) appear to have large effects on R^2 value of Customer Solution Performance if they are removed. While removal of Pricing Innovation (0.020) has small effect, removal of Retail Innovation (0.007) has no effect.

However, assessment of f^2 effect sizes for significance indicates that at the 5% probability of error level zero falls into the 95% percentile confidence intervals of all f^2 effect sizes. Moreover, the t values of all f^2 effect sizes ($t \leq 0.877$) are below the critical values of 1.96. Assuming a 5% significance level, one observes that the f^2 effect sizes are not significant ($p < 0.05$). Therefore, the removal of the predictor constructs does not significantly affect the endogenous construct's R^2 value.

Assessment of Predictive Relevance

Predictive relevance (Q^2) measures is the model's out-of-sample predictive power. The Q^2 value is obtained by using the

blindfolding procedure for a specified omission distance (D) of nine (9) with cross-validated redundancy approach. The Q^2 values estimated by the blindfolding procedure represent a measure of how well the path model can predict the originally observed values (Hair et al., 2022).

Further, Q^2 establishes the predictive relevance of the endogenous constructs, in this case Customer Solution Performance. Q^2 values above zero (> 0) indicate that your values are well reconstructed and that the model has predictive relevance (Hair et al., 2022; Ringle et al., 2019).

Table 17: Predictive Relevance (Q^2)

Constructs	SSO	SSE	Q^2 (=1-SSE/SSO)
Pricing Innovation	336	336	**0**
Product Innovation	336	336	**0**
Promotion Innovation	420	420	**0**
Retail Innovation	336	336	**0**
Solution Performance	420	351.522	**0.163**

Table 17 above presents the summary predictive relevance (Q^2) with the total outcomes of the blindfolding procedure based on construct cross-validated redundancy.

As can be seen, the Q2 value of the endogenous construct is considerably above zero. More precisely, Solution Performance has a Q2 value of 0.163. This result provides clear support for the model's predictive relevance for the endogenous latent variable Customer Solution Performance. That is, the exogenous constructs have predictive relevance for the endogenous construct under consideration. Therefore, the Q2 value of 0.163 indicates meaningful predictive relevance for the path model using PLS-SEM have predictive relevance for Solution Performance.

Assessment of Effect Size q^2

The q^2 effect size measures the relative impact of predictive relevance (Q^2). The effect size q2 allows assessing an exogenous construct's contribution to an endogenous latent variable's Q^2 value (Hair et al., 2022; Ringle et al., 2019).

To determine the q^2 effect size of each predictive construct on the endogenous latent variable (Solution Performance), PLS-SEM model results with ($Q^2_{included}$) and without ($Q^2_{excluded}$) an exogenous construct were computed manually based on the following formula (Hair et al., 2022).

$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}$$

The $Q^2_{excluded}$ value is obtained from a model estimation after deleting a specific exogenous construct of the endogenous latent variable. Identical value for the omission distance (D = 9) was used when computing the result $Q^2_{excluded}$ during a blindfolding procedure. The $Q^2_{included}$ results from the previous blindfolding estimation are available from Table 17 above.

As a relative measure of predictive relevance, values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium, or large predictive relevance, respectively, for a certain endogenous construct (Hair et al., 2022). Table 18 shows values on the relative impact of removal of an exogenous construct has on the predictive relevance (Q^2) of endogenous latent variable.

Table 18: q2 Effect Sizes

	Solution Performance
Product Innovation	0.0024
Pricing Innovation	0.0167
Retail Innovation	0.0227
Promotion Innovation	0.0000

The examination of what relative impact the removal of an exogenous construct has on the predictive relevance (Q^2) of the endogenous latent variable reveals that the endogenous constructs recorded q2 effect sizes with no predictive relevance to medium predictive relevance. As can be observed, Table 18 above provides q2 effect sizes of 0.0024, 0.0167, 0.0227, and 0.0000 respectively Product Innovation, Pricing Innovation, Retail Innovation, and Promotion Innovation.

Based on guidelines for assessing f^2 and values of f^2 recorded Table 18 above, evaluation of the sizes of f^2 reveals that Product Innovation (0.042) and Promotion Innovation (0.050) appear to have large effects on R^2 value of Customer Solution Performance if they are removed. While removal of Pricing Innovation (0.020) has small effect, removal of Retail Innovation (0.007) has no effect.

However, assessment of f^2 effect sizes for significance indicates that at the 5% probability of error level zero falls into the 95% percentile confidence intervals of all f^2 effect sizes. Moreover, the t values of all f^2 effect sizes ($t \leq 0.877$) are below the critical values of 1.96. Assuming a 5% significance level, one observes that the f^2 effect sizes are not significant ($p < 0.05$). Therefore, the removal of the predictor constructs does not significantly affect the endogenous construct's R^2 value.

4.6 Discussion of Findings

The main objective of this study was to examine the effect of marketing innovation on customer solution performance of B2B information communication technology consultancy in Ethiopia.

The definition of marketing innovation employed in this study was 'the combination of significant product design improvements; implementation of new pricing strategies; implementation of entirely new retail concepts; and implementation of entirely new promotion concepts' (Stosic, cited in Quaye and Mensah, 2019, p. 19) while **c**ustomer solution performance was considered as the effectiveness of customer solution (Powers et al., 2016).

Reliability and Validity of Measurement Models

In order to achieve the objective of the study, rigorous analysis of the measurement model was conducted to examine multivariate outliers, non-normality, indicator loadings, reliability and validity.

A multivariate outlier assessment using Mahalanobis distance and degree of freedom scored 2.166 value, which is below the threshold value of 2.5, indicating that multivariate outlier is not an issue in this study. Non-normality of data regarding skewness and kurtosis was not an issue as both the kurtosis and skewness values of the indicators recorded within the –2 and +2 acceptable range.

Results of reliability assessment (Cronbach's Alpha ≥0.817 and Composite Reliability ≥ 0.841) suggest that the construct measures Product Innovation, Pricing Innovation, Retail Innovation, Promotion Innovation and Customer Solution Performance exhibit high levels of internal consistency reliability. All outer loadings scored of 0.726 indicating that all indicators exhibit a sufficient level of reliability (indicator reliability ≥ 0.527) and all AVE values are above

0.50 (AVE ≥ 0.641) providing support for the measures' convergent validity. All standardized loadings were above cross-loadings, square roots of AVE values were above highest correlation, and the maximum recorded HTMT value was 0.743 satisfying discriminant validity.

Predictive Capability of Structural Model

To determine the model's capability to predict target construct collinearity statistics of exogenous constructs, standardized path coefficients, coefficients of determination (R^2 values), f^2 effect size, predictive relevance (Q^2 value), and q^2 effect size were examined.

The variance inflation factor (VIF) scores range from 1.597 to 3.564 and thus remain under the critical level of 5.00. Only the standardized path coefficients between Retail Innovation and Customer Solution Performance is statistically significant ($\beta = 0.217$; $t = 2.053$; $p = 0.04$). Retail Innovation explains 30.3 percentage of the total variance ($R^2 = 0.303$) in Customer Solution performance. Product Innovation, Promotion Innovation, and Retail Innovation have predictive relevance for Solution Performance ($Q2 = 0.163$).

Summary of Study Hypotheses Testing

This study investigated four hypotheses, detailing the relationship between marketing innovation and customer solution performance. These four hypotheses proposed a direct positive effect of the Product Innovation, Pricing Innovation, Retail Innovation, and Promotion Innovation on Customer Solution Performance; i.e. the more these activities are executed in a solution-oriented manner, the higher the performance of the customer solutions will be.

The discussion that proceeded next focused on results of hypotheses tests as provided in Table 19 below.

Table 19: Summary of Hypotheses Testing

Hypotheses	Path			Path coefficients	t values	p values	Decision
H_1	Product Innovation	→	Solution Performance	0.161	1.436	0.15	Rejected
H_2	Pricing Innovation	→	Solution Performance	0.224	1.701	0.09	Rejected
H_3	Retail Innovation	→	Solution Performance	0.217	2.053	0.04	Accepted
H_4	Promotion Innovation	→	Solution Performance	0.095	0.93	0.35	Rejected

H_1: Product Innovation and Customer Solution Performance.

This hypothesis (H1) the study postulated that product innovation is positively and significantly related to customer solution performance. Extant literature substantiates that product innovation is among marketing mix elements that enable effective customer solution (OECD, 2005; Powers et al., 2016).

However, the result of this study (H_1: $\beta = 0.161$; $t = 1.436$; $p = 0.150$) proves contrary. Though, this hypothesis appears positive ($\beta = 0.161$), the result demonstrated that the effect of product innovation is insignificant ($p < 0.05$) to customer solution performance. The finding suggests presence of product improvements other than product design, new product packaging, unique product features, and product style considered in this study that are necessary to develop product innovation which will lead to solution performance.

However, in order to make a firm conclusion, it is important to further investigate the influence of these improvements on customer solution performance. Further investigations can consider changes in product performance, and product meaning (Ilić et al., 2014; OECD, 2018; Quaye and Mensah, 2019).

H_2. Pricing Innovation and Customer Solution Performance.

This hypothesis (H3) the study advanced that pricing innovation is positively and significantly related to customer solution performance. In line with customer solution performance, there are performance based pricing strategies in the B2B context (Purchase and Volery, 2020).

However, the result of this study (H_2: $\beta = 0.224$; $t = 1.701$; $p = 0.090$) proves contrary. Though, this hypothesis appears positive ($\beta = 0.224$), the result demonstrated that the effect of product innovation is insignificant ($p > 0.05$) to customer solution performance. The finding suggests presence of pricing systems other than interactive online, "cost plus a percentage mark-up", variable, and preferential pricing systems considered in this study that are necessary to develop product innovation which will lead to customer solution performance.

However, in order to make a firm conclusion, it is important to further investigate the influence of these pricing systems on customer solution performance. Further investigations can consider such pricing strategies as contingency pricing, profit sharing and coordinated pricing across multiple channels and advanced payment systems (Purchase and Volery, 2020).

H_3: Retail Innovation and Customer Solution Performance.

The third hypothesis (H_3) of this study advanced that retail innovation is positively and significantly related to customer solution performance. Previous research posits that retail innovation is 'the implementation of new marketing methods of reaching out to customers with a product in a convenient and sound condition' (Quaye and Mensah, 2019, p. 43).

On this hypothesis (H_3), the study result (H_3: $\beta = 0.217$; $t = 2.053$; $p = 0.040$) show that retail innovation is positively ($\beta = 0.217$) and significantly ($p < 0.05$) related to customer solution performance. This is consistent with the

work of Quaye and Mensha (2019) where innovative retail techniques enable businesses to reach out to customers.

Among four innovative retail techniques (franchising, licensing and exclusive retailing; direct delivery by supplier; show-rooms and display units; and internet platform) considered in this study, show-rooms and display units followed by launching internet platforms received the highest on customers' perception of retail innovation. Franchising, licensing and exclusive retailing technique recorded least. Thus, marketing managers should try to enhance the customers' perception of the innovativeness of their business ICT solutions by means of establishing show rooms and display units to enable solutions demonstrations, and launching internet platforms to enable online ordering by customers.

H_4: Promotion Innovation and Customer Solution Performance.

The fourth hypothesis (H_4) of this study advanced that promotion innovation is positively and significantly related to customer solution performance.

The result of the fourth hypothesis (H_4) test reveals that promotion innovation does not significantly influence customer solution performance (H_4: β= 0.095; t = 0.930; p = 0.350). This is contrary to previous research which posits that promotion innovation, among others, constitutes new selling techniques that enable solution providers demonstrate the value of a solution (Huang, 2018).

Based on the analysis of the result, the hypothesis framework receives only partial support. Product Innovation (H_1), Pricing Innovation (H_2), and Promotion Innovation (H_4) do not have any significant direct effect on Customer Solution Performance. Only one hypothesis (H_3) was confirmed. Only Pricing Innovation has a significant direct effect on Customer Solution Performance.

The finding from this research indicate that retail innovation by ICT solution providers improves customer solution performance for ICT solution customer. The finding implies that, though innovation in marketing elements is related to customer solution performance, marketing innovation related to only retail innovation has positive and significant effect on customer solution performance. Therefore, ICT solution provider firms should concentrate their marketing efforts on enhancing their retail innovation rather than other marketing to maximize the performance of the solutions the provided to their customers.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Based on the discussion in the preceding chapter, this chapter ends the report of the thesis by providing summary, conclusion, and recommendation of the research. The chapter also discusses on the limitations of the research and areas of future research.

The main purpose of this study was to assess if any, the effect of marking innovation on customer solution performance. The study utilized the dynamic capability theory and process based approach as theory underpinning the study. Valid responses for this study comprised 84 referred ICT solution customer firms in Addis Ababa. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to test four hypotheses and the findings were discussed in the preceding chapter.

5.2 Summary of the Study

The respondents are predominantly in the age groups 20-40 years (94%). 57% of the participants are male. Majority (71%) of the respondents have worked on their current position. 69% of the participants have received degree. Majority of participants are solution users (63%).

Solution customer firms represent diverse industries: academia (8%), banking (7%), export & import (25%), healthcare (13%), hotel & tourism (24%), insurance (5%), and transport and logistics (18%). A balanced representation was observed in terms of firm age. All firms are domestic and have a mean size of 565 employees.

Evidence of reliability is excellent, and construct validity is present based on indicator, convergent, and discriminant validity.

The path model shows moderate in-sample predictive ability based on the sizes of the R^2, the path coefficients, and the f^2 effect sizes. Only the standardized path coefficients between Retail Innovation and Customer Solution Performance is statistically significant ($\beta = 0.217$; $t = 2.053$; $p = 0.04$).

Retail Innovation explains 30.3 percentage of the total variance ($R^2 = 0.303$) in Customer Solution performance. Retail Innovation also have predictive relevance for Solution Performance ($Q2 = 0.163$).

Only retail innovation of ICT solution providers contributes strongly to ICT solution performance in Addis Ababa. Product, pricing and promotion innovation of ICT solution providers are unable to achieve significant ICT solution performance in Addis Ababa.

5.3 Conclusion of the Study

The statistical results of this study lead to the following conclusions on the study objectives and questions.

- Retail innovation is key to achieving business customer solution performance in Ethiopian ICT business market.
- Innovative retail practices such as setting show-rooms and display units followed and launching internet platforms.
- Dynamic capability and process based approach are key to customer solution performance. Incorporation of dynamic marketing capabilities through retail innovation provides a sufficient improvement in performance of customer solution development process.
- Deploying both dynamic capability and process based approach to solution development and deployment is important for ICT firms to

cop up with the market dynamics and to satisfy changing customer needs.

5.4 Recommendations

This study recommends that ICT solution provider firms in Ethiopia should prioritize their key marketing resources and capabilities in retail innovations in order to achieve the performance of ICT solution they provide to their clients.

This study also recommends that ICT solution provider firms should put their emphasis more on innovative retail strategies such as establishing show rooms and display units to enable solutions demonstrations, and launching internet platforms to enable online ordering by customers important to ensure the performance of ICT solutions.

5.5 Contributions of the Study

Few studies empirically examine solution performance from the perspective of solution customers. Moreover, literature that incorporates dynamic capability of firms into their solution development and deployment process is scant. Building on dynamic capability theory and process based approach, the findings of this have important implications for the solutions and innovation literature, and managerial practices on solution marketing in four respects.

First, the study extends marketing innovation by conceptualizing it as a tool that enables firms to respond to market dynamism and changing customer preference by offering solutions that perform (Chuwiruch et al., 2015).

Second, the study also responded to the call of Powers et al. (2016) by empirically testing customer solution performance from the perspective of solution customers.

Third, since customization and adaption is key requirement in the provision of solutions (Jagstedt 2016), the results of the study may provide practical insight for solutions firms' managers and decision makers that help identify marketing mix element that need innovation or significant change in order to achieve successful customer solutions.

Fourth, solution providers should carefully determine whose problem they want to solve (Zimmer, 2014). Especially technology-driven firms tend to emphasize their offering's problem-solving capability for user problems, ignoring the fact that users are often not the persons who buy the solution or decide upon the purchase.

5.6 Limitations and Future Research Directions

This research has limitations which merit future research potential.

The first limitation is related to industry type of solution provider and customer. This study considered on the performance of Information and Communication Technology solutions. Future studies may pursue performance of customer solutions from other industry types. Therefore, the results of this study cannot be generalized to other sectors. Understanding solution performance across different sectors can be a potential future research area.

Second, this study considered cross-sectional data. Thus, the study didn't reveal effects of long-term provider-customer relationships on solution performance. Future researches may employ longitudinal data to understand long-term relational effects on customer solution performance (Powers et al., 2016).

Third, solution performance of business-to-business context was analyzed in this study. Other studies may advance similar work in business-to-customer context.

Fourth, this study used data from only solution customers. However, proposing a solution's value takes both the supplier and the customer (Macdonald et al., 2016). Therefore, dyadic assessments that capture the overall performance of customer solution from both the provider and customer side important (Powers et al., 2016).

Fifth, data for this study were collected from single respondent in each sample firm. Future studies can consider multiple respondents from each sample firm to avoid such problem.

Finally, this study's sample is limited to solution providers and customers in Addis Ababa, Ethiopia. Therefore, the results of this study cannot be generalized to other economic centers in Ethiopia. Future studies can advance the literature of solution performance in different economic centers in the country.

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APPENEDICES

Appendix A Research Questionnaire

Introduction

I am a graduate Marketing Management student at **Addis Ababa University, School of Commerce**. I am undertaking a study on the topic *"The Effect of Marketing Innovation on Customer Solution Performance in Ethiopian IT business markets"* in partial fulfilment of requirement for the award of degree of Master of Art in Marketing Management. Your support and cooperation in answering the questionnaire by providing your honest and most accurate response is very important to make the study successful. Your responses will be kept strictly anonymous and confidential.

Thank You.

Tegegne Yismaw

GENERAL INSTRUCTION

- Please do not write your or your company's name on the questionnaire.
- Please put the (√) sign in the appropriate boxes.

Section A: Respondents Characteristics of (5 items)

1. **Please indicate your gender status:** Male ☐ Female ☐
2. **Please indicate your age group in years:**

   20-30 ☐ 31-40 ☐ 41-50 ☐ > 50 ☐
3. **Please indicate your educational level:**

   Diploma ☐ Degree ☐ Masters ☐ PHD ☐
4. **Please indicate your current job position:**

   Project Manager ☐ Solution Purchaser ☐ Technical Manager ☐ Solution User ☐
5. **Please indicate your tenure in the current job position in Years:**

   < 1 ☐ 1-3 ☐ 4-10 ☐ > 10 ☐

Section B: Customer Firm Characteristic (4 items)

6. **Which industry is your firm engaged in?**

   Academia ☐ Banking ☐ Export & Import ☐ Health ☐

   Hotel& Tourism ☐ Insurance ☐ Transport & Logistics ☐

7. **What is the age of your company in years?**

   < 5 ☐ 6-10 ☐ 11-15 ☐ >16 ☐

8. **How many employees does your company currently have? _____**

9. **What is your company's ownership type?**

   Fully foreign owned ☐ Joint venture ☐ Local ☐

Section D: Marketing Innovation (17 items)

For **Q#14-30**, please rate the marketing innovations you have experienced in the last twelve months as part of the solution you received on 1-6 scale.

Where: 1-Disagree very strongly, 2-Disagree strongly, 3-Disagree, 4-Agree, 5-Agree strongly, 6-Agree very strongly.

No	Innovative Marketing Activities. For the first time;	1	2	3	4	5	6
A	**Product/service innovation**						
1.	Do you agree or disagree that new product designs (shape, size, color, taste) have been introduced as part of the solution you received						
2.	Do you agree or disagree that new product packaging has been launched as part of the solution you received						
3.	Do you agree or disagree that existing product features have been replaced with unique features as part of the solution you received						
4.	Do you agree or disagree that innovative product styles have been introduced as part of the solution you received						
B	**Pricing innovation**						
5.	Do you agree or disagree that new interactive online pricing systems have been introduced as part of the solution you received						
6.	Do you agree or disagree that a "cost plus a percentage mark-up" pricing have adopted as part of the solution you received						
7.	Do you agree or disagree that product packaging has been modified in order to vary prices as part of the solution you received						
8.	Do you agree or disagree that loyal customers receive preferential prices as part of the solution you received						
C	**Retail Innovation**						
9.	Do you agree or disagree that franchising, licensing and exclusive retailing have been introduced as part of the solution						

	you received						
10.	Do you agree or disagree that suppliers own direct delivery and selling systems have been introduced as part of the solution you received						
11.	Do you agree or disagree that show-rooms and display units have been introduced as part of the solution you received						
12.	Do you agree or disagree that internet platform has been launched for customers to order online as part of the solution you received						
D	**Promotion innovation**						
13.	Do you agree or disagree that supplier calls, sends text messages to us about new products offers as part of the solution you received						
14.	Do you agree or disagree that business cards, posters, newspapers and radio have been introduced as part of the solution you received						
15.	Do you agree or disagree that supplier has re-branded its product using new brand symbols as part of the solution you received						
16.	Do you agree or disagree that supplier has created social network site and website to promote its products as part of the solution you received						
17.	Do you agree or disagree that supplier advertises its products in movies and television programs as part of the solution you received						

Section E: Customer Solution Performance (5 items)

For **Q#31-35**, please rate the performance of the solution you receive from the supplier in the last twelve months on 1-7 scale.

Where: 1- Strongly disagree, 2-Disagree, 3-Somewhat disagree, 4-Neither agree nor disagree, 5-Somewhat agree, 6-Agree, 7-Strongly agree

No	Dimension	1	2	3	4	5	6	7
18.	Do you agree or disagree that the solutions you received have effectively met our practical requirements.							
19.	Do you agree or disagree that the solutions you received have effectively integrated and customized technology and product designs for the customer firm.							
20.	Do you agree or disagree that the solutions you received have provided us with comprehensive technical support service.							
21.	Do you agree or disagree that you are very satisfied with the solutions you received.							
22.	Do you agree or disagree that you are very satisfied with the technical support service you received.							

Appendix B Descriptive Statistics of Scaled Measures

No	Constructs and Items	Min	Max	Mean	STDV
	Product innovation	**3.00**	**5.75**	**4.43**	**0.65**
1	New product designs (shape, size, color, taste) have been introduced	3.00	6.00	4.57	0.75
2	New product packaging has been launched	3.00	6.00	4.55	0.78
3	Existing product features have been replaced with unique features	3.00	6.00	4.26	0.92
4	innovative product styles have been introduced	3.00	6.00	4.32	0.78
	Pricing innovation	**2.75**	**5.75**	**4.24**	**0.71**
1	New interactive online pricing systems have been introduced	2.00	6.00	4.18	0.93
2	A "cost plus a percentage mark-up" pricing has been adopted	2.00	6.00	4.30	0.82
3	Product packaging has been modified in order to vary prices	2.00	6.00	4.23	0.90
4	Loyal customers receive preferential prices	3.00	6.00	4.26	0.75
	Retail Innovation	**2.25**	**6.00**	**4.13**	**0.80**
1	Franchising, licensing and exclusive retailing have been introduced	1.00	6.00	3.94	1.03
2	Provider's own direct delivery and selling systems have been introduced	2.00	6.00	4.15	0.86
3	Show-rooms and display units have been introduced	2.00	6.00	4.32	0.85
4	Internet platform has been launched for customers to order online	2.00	6.00	4.10	0.94
	Promotion innovation	**3.10**	**5.90**	**4.34**	**0.67**
1	Provider called, sent text messages to you about new product offers	2.00	6.00	4.01	0.87
2	Business cards, posters, newspapers and radio have been introduced	2.50	6.00	4.35	0.74
3	Provider has re-branded its product using new brand symbols	3.00	6.00	4.24	0.87
4	Provider has created social network site and website to promote its products	3.00	6.00	4.65	0.81
5	Provider advertised its products in movies and television programs	2.50	6.00	4.44	0.71
	Solution Performance	**2.20**	**6.80**	**4.71**	**0.88**
1	Solutions you received have effectively met practical requirements.	1.00	7.00	4.56	1.07
2	Solutions effectively integrated and customized technology and product designs according to need.	2.00	7.00	4.88	1.06
3	Solutions provided you with comprehensive technical support service.	2.00	7.00	4.87	1.08
4	Very satisfied with the solutions received.	2.00	7.00	4.71	1.06
5	Very satisfied with the technical support service received.	2.00	7.00	4.55	1.17