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Impact Of Uncertainty And Supply Chain Maturity On Supply Chain Performance Of Indian Companies

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Abstract :In A Technology Oriented Business Environment Organizations View Process As Their Strategic Assets Which Is A New Business Approach. Organizations Now Do Not View Their Supply Chain As A Collection Of Functional Areas Instead They Are Viewed As Highly Integrated Process As A Combination. In Order To HaveA Sustainable Supply Chain Organizations Need To Have A Matured Supply Chain Which Is Integrated From Suppliers Till The End Customers. The Maturity Level Determine The Ability Of The Organization To Respond To The Changes And Uncertainties That Occur In The Business Environment. The Organization With HighLevel Of Maturity Have A Dynamic Supply Chain That Is Adaptable And Flexible To Any Changes On The Other Hand Firms With Lower Maturity Level Have A Very Minimal Coordination With Its Partners And Suppliers, Lesser Visibility Of Supply Chain And Finds Difficult To Adapt And React To Any Changes. Though There Are Many Research On Supply Chain Maturity, But The Impact Of Supply Chain Maturity On Performance And Profitability Is Not Studied In Detail And Not Studied In Indian Perspective. The Project Approaches This Gap And Aims To Identify The Impact Of Uncertainty And Supply Chain Maturity On Supply Chain Performance Of Indian Companies With The Help Of Detailed Questionnaire.

Keywords : Supply Chain Management, Supply Chain Maturity, Cronbach's Alpha Values

1. INTRODUCTION

The Increased Globalization And World-Wide Competition Among The Manufacturers With The Advancement Of Technology Has Changed The Entire Business Environment. ManufacturesAre Trying To Integrate Their Process And Trying To Have A Clear Eagle Eye View Of Their Overall Process Where Supply Chain Management Comes Into Play. Chopra And Maindl Defines Supply Chain Management As A Long Term Performance Improvement With A Defined Practices And Approaches. On The Whole The SCM Is Also Called As A Business Model With High Performance (Koh Et Al., 2007). Supply Chain Management Practice Integrates The Members Involved In The Supply Chain Such As Supplier, Manufacturer, Distributor And Customer. The Expectations Of TheCustomer In The Modern Days Are Very High, They Need High Customization, Delivery In Short Time, And They

Look For New Innovations And Technology To Be Incorporated At A Minimal Price. In Order To Achieve These Expectation And Changing Market Demand Firms Need To Have An Integrated Environment. The Integration Starts From Process Integrations. Organizations Are Now A Days Viewed As Group Of Integrated Process They Are Not Viewed As Functional Area Collections And Processes Are Viewed As Assets That Becomes Mature With Investment And Development Of The Process (Mccormack, 2004). The Integration Of Activities Help In Enhancing The Performance And Achieving The Effective Supply Chain And Competitive Advantage In The Market (Anatan, 2014) (Koh Et Al., 2007). The Dynamic Change In Customer Expectations And Market Can Only Be Handled By A Matured Supply Chain I.E A Matured Supply Chain Is Capable And Flexible Enough To Overcome Any Changes That Occurs In The Business World. An Organization Is Said To Be Following Best Practices When It Has Higher Level Of Maturity In Its Supply Chain That Is Adaptable And Flexible. Similarly The Company With Low Level Of Maturity Will Have Less Visibility, Less Coordination With Is Supply Chain Partners And Finds It Difficult To Any Uncertainties And Changes In The Working Environment (Netland Et Al., 2007). A Company's Supply Chain Maturity Can Be Identified With The Maturity Models. Earlier There Were No Maturity Models Developed For Supply Chain, But After The Proposal Of Maturity Model Based On Business Process Orientation By Archie Lockamy III And Kevin Mccormack With SCOR Model As Reference The Number Of Models For Accessing Supply Chain Maturity Increased (Mccormack, 2004). The Maturity Models Helps Companies To Benchmark Their Maturity In Operations That Are Best Practices In The Industry. The Maturity Model Consist Of Maturity Level Each Level Defines A Set Of Maturity Level Possessed By The Firm (Netland Et Al. 2007). Firms With Higher Maturity Are Found To Be Profitable And Have High Supply Chain Performance Compared To Firms With Lower Supply Chain Maturity. The Firms With HighMaturity Are Able To Handle The Disruptions Effectively. The Disruptions Are Failure Modes Which May Occur In Different Areas Like Disruption In Supply, Transportation, Facility, Communication, And Demand. The Disruption Can Be Managed By Events That Have Low Occurrence Probability But On The Other Hand Have High Impact On Performance Of SupplyChain (Janat Shah). The Measurement Of Supply Chain Performance Is Based On The Efficiency And Effectiveness Of The Supply Chain. These Are Measured With Two Indicators Cost And Reliability. The Cost Indicator Includes Cost Of Ware Housing, Cost Of Outbound Activities, Cost Of Holding Inventory And Turnover Of Assets. The Reliability Indicator Includes Rate Of Order Fulfillment, Inventory Turnover, Obsolesces Of Inventory, Safety Stock And Number Of Warranty Claims (Lee Et Al., 2007). The Higher Supply Chain Maturity Helps The Supply Chain Resilience Such As Preparedness, Alertness, And Agility Which Is Found To Have A Greater Influence To The Financial Performance Of Supply Chain (Li Et Al., 2017). There Are Many Projects That Concentrate On The Maturity Model For Various Industry Specific Or Based On The Size Of The Firms But Only Very Few Studies Are Made On Understanding The Impact Of Supply Chain Maturity In Performance And Profitability Of The Firms And There Is No Study On Developing Countries Like India And The Small Medium Scale Companies Are Not Studied For The Supply Chain Maturity And Its Impact On Financial And Operational Performance. Small And Medium Scale Companies Play A Vital Role By Supporting Large Firms. They Also Play An Important RoleIn The Economy By Generating Employment Opportunities And Growth Of Economy. Small And Medium Scale Companies Accounts To Half The Employment In Developing Countries (Koh Et Al., 2007). India Accounts To About 42.50 Million Small And Medium Scale Companies Which Is95% Of Countries Total Industrial Units. It Employs 40% Of The Total Workforce Of India And Produced More Than 6000 Products. This Project Aims To Address This Gap

The Following Section Contains Detailed Literature Review, Research Methodology, Data Collection, Testing, Results And Conclusion.

2. LITERATURE REVIEW

In The New Era Of Business Process Is Found To Be The Strategic Asset Of Organizations. The Organizations Are Now A Days Seen As A Highly Integrated Process Which Was Seen Initially As A Collection Of Different Functional Areas. The Supply Chain Maturity Model Is Developed Using Business Process Orientation As The Base Concept (Mccormack, 2004). The Process Maturity And Model Developed By Software Engineering Institute Is Taken As The Base For Developing Business Process Orientation Model Otherwise Called As BPO Model. The BPO Model ConsistOf Five Stages Of Process Maturity (Söderberg, 2010).
The First Maturity Model For Supply Chain Management Was Developed By Lockamy III And Mccormack Based On The Concept Of Business Process Orientation And Referring The Supply Chain Operations Reference Model (SCOR) (Söderberg, 2010). The SCOR Model Consist Of Plan, Source, Make, Deliver And Return Processes Of Supply Chain And Defines The Technology And Metrics Used In Each Area (Mccormack K. L., 2008). The SCM Maturity Model Build With SCOR Framework Consist Of Five Levels Which Are Ad Hoc, Defined, Linked, Integrated And Extended. The Business Units Cannot Skip The Maturity Level Because Each Level Acts As A Foundation From Which The Next Level Can Be Achieved And Avoiding A Level Leads Counter Productivity (Mccormack, 2004).

The Study Of Effect Of Performance Due To The Advancement In Maturity Stage Was Studied By Many Researchers And Found That The Higher The Maturity Level The Higher Is The Performance Of Supply Chain Of The Company (Mccormack, 2004). When Each Level Of Maturity Is Attained The Process Capability Such As Predictability, Control, Effectiveness, And Efficiency Are Reaching A Greater Level (Mccormack, 2004) (Mccormack K. L., 2008). A Study Was Made With 534 Respondents In Brazil To Understand The Supply Chain Maturity And Supply Chain Performance. The Study Resulted That The Maturity Model Helps The Firm By Providing A Clear Process Definition And Established A Measurement System That Helps In Improving The Process Of Supply Chain (Mccormack K. L., 2008). A Similar Study Was Made With SME's On Supply Chain Maturity And Supply Chain Performance. The Study Was Made By Interviewing Employees And Survey Of Fifteen SME's In Engineering Industry. The Study Reveals That As The Maturity Level Of Organization Increases The Performance Of Supply Chain Increases. Also A Positive Relation Was Found Between The Financial Performance And Maturity Level Of The Firms.(Söderberg, 2010) Software Engineering Institute At Carnegic Mellon Developed A Maturity Model Called As Capability Maturity Model Which Is Also Called As CMM. The Model Was Commissioned By UD Defense Department That Helped In Accessing The Ability Of The Company In Software Development. The CMM Determines The Five Degrees Of Maturity Of The Organisation's Production Processes, Where The Extent Of Maturity Represents How Effectively A Business Handles Its Processes. (Bunting Et Al., 2002)

The Delphi System Has Been Developed By Rand Corporation. It Offered A Methodology That Helped In Achieving The Most Credible Consensus Among A Community Of Experts. (Linstone And Turoff, 1975; Okoli And Pawlowski, 2004). The Delphi Process Was Consist Of Three Phases. The First Phase Was Proposing A Definition For Supply Chain, Then Followed By Validating The Definition And Finally A Meta Model Was Developed And An Assessment Tool Was Developed. There Were Five Maturity Levels: Undefined, Defined,

Manageable, Collaborative And Leading. The Experiment Allowed Them To Determine The Ability Of SCM. Following This, APilot Test Was Conducted Based On A Questionnaire.

In The Assumption That Companies Need To Monitor And Regulate Their Assets And Process Uncertainties To Provide Value To Consumers In A Cost-Effective Way, Production And Utility Supply Chains Are Set Up (Aitken Et Al. 2016). In Order To Maximize Control And Collaboration, And Otherwise Enhance The Efficacy Of Their Decision-Making Processes, Various Authors Have Also Recognized The Need To Manage, Reduce Or Eliminate Uncertainties From Their Business. TheUCM Involves Defining Of Four Areas Of Uncertainty: Supply Uncertainty, Supply Uncertainty, Process Uncertainty And Control Uncertainty. Empirical Uncertainity Data Was Collect With The Employment Of Site Based QSAM(Aitken Et Al. 2016). QSAM Is Anchored In The UCM And Needs A Comprehensive, Multi-Method Diagnostic Technique Designed To Execute A Supply Chain Health Review (Childerhouse And Towill, 2011a). It Was Originally Designed To Allow Researchers To Obtain Reliable Comparative Performance And Organizational Evaluations (Childerhouse And Towill, 2011b) While Minimizing Host Organization Interruptions As Well. The UCM Has The Ability To Become A Valuable Instrument For Measuring The Sophistication / Maturity Of The Supply Chain Across Dramatically Different Environments (Aitken Et Al. 2016). Combining The UCM With The QSAM Method Offers A Scalable Framework And Centralized Tools For Collection Of Data And Analyze It To Assist The Dissemination Of Best Practices That Are Proven Across Different Sectors Of Business And Industry By Assisting The Transfer Between Services And Manufacturing Sectors Of Learned Solutions (Aitken Et Al. 2016).

An Electronic Survey Form Obtained The Data Needed To Assess The Characteristics Of Companies And Rank Them Into One Of The Five Categories Of SCPM3 And The OLC. The Population Consist Of Managers Of Supply Chain And People From Similar Fiels Who Are Graduated As MBA In Logistics And Supply Chain. (Souza, Guerreiro, And Oliveira 2015). The Companies' SCPM3 Classifications Were Compared Using The Mann-Whitney Test. But No Substantial Change Was Detected. So, On A Five-Point Likert Scale, The Respondents Were Asked To Comment. This Culminated In One Of SCPM3's Levels Becoming A Turning Point (Souza Et Al. 2015). A Correspondence Analysis Was Used To Analyze The Association Between SCPM3 And OLC Levels / Stages. This Was Achieved Because It Was Suitable For Non-Metric Variables And Also Because It Displays The Proximity In A Graphical Output, Called A Perceptual Map, Of Each Group Of SCPM3 And The OLC.

In The Case Of SME's And Hospitals, In Santa Catarina State, Brazil, A Research Was Performed. Of The 221 Hospitals In The State, 192 Active Hospitals Were Chosen For The Study. The Research Instrument Was Sent Via The Mail And E-Mail. They Got A Response From 21.9 Per Cent Of The Population Surveyed. The Respondents Were Managers Of The Procurement Region Of The Company. It Was Important To Note That The Progression Of Sophistication Of Procurement Strategy Is Slightly Higher Than For Other Macro-Processes, But Only When Hospitals Have More Than 500 Staff (Tontini Et Al. 2016).

With Further Study, It Was Determined That Public Hospitals Are More Advanced Than Private Hospitals (Profit And Non-Profit) In The Process Of Acquiring Supplies And Managing Product Turnover. In The Other Hand, Non-Profit Hospitals Are Less Mature When Purchasing Lead-Time (Tontini Et Al. 2016).

Regarding The Metal-Mechanic Sector, A Questionnaire Was Sent To For A Pre-Test To Five Companies. Developing This Assessment, Taking Into Account The Scale Of The Companies, It Seems That The Maturity Of Materials Management Is Evolving As The

Number Of Employees Rises, Becoming Statistically Different In Companies With More Than 100 Employees. Finally, ByComparing Metal-Mechanical Firms With Hospitals, It Was Observed That The Metal-Mechanical Industries Have A Greater Maturity In The Purchasing Process (Tontini Et Al., 2016).

A Study Used A Self-Directed Retrospective Survey Focused On A Selection Of Cross-Industry Supply Chain Practitioners From Brazilian Firms. For The Development Of The Testing Instrument, A Literature Analysis On "Performance Control Systems And Sophistication Models" Has Been Conducted For The First Time. A Pre-Test Was Used In The First Phase Of Data Collection To Verify The Translated Instrument And Determine The Recommended Sample Size For The Final Data Collection. An Estimation Of The Population Variance Was Determined Using The Maturity Levels Of Each Respondent Using The Data From This Pilot Survey. Tests Were Performed Using The Spearman Correlation Coefficient To Achieve A Response. The PLS Algorithm Was Used In Order To Better Understand The Relation Of The Model As A Whole Between Performance And Maturity (Mccormack Et Al., 2008). The Analytical Findings Suggest A Clear And Optimistic Statistical Association Between The Maturity And Performance Of The Supply Chain. The Findings Further Indicate That The Maturity Of The Distribution Process Has A Greater Effect On Average Performance Than Other Systems In The Supply Chain.

A Research Suggests That A Qualitative Methodology Has Become More Fitting To Direct The Growth Of Scientific Science Because It Is Versatile And Draws On The Experiences Of Practitioners. The Analysis Of The Relationship Between PMS And SCM Maturity In The Presence Of A Researcher Was Explained Using Dynamic Structures And Test Protocols (Frederico &Martins, 2012).

Further An Empirical Research Was Done On 15 Swedish Steel SME Companies From The Steel Cluster In The Gästrikland Of Sweden. The Data Collected From A Questionnaire About Supply Chain Process Maturities (Bengtsson Et Al., 2010). Correlation And Regression With The Aid Of SPSS Were Its Key Data Analysis Methods Used. Regression Analysis Is Used Here To Analyze The Association Between Multiple Variables On A Single Variable. As A Result, Inventory TurnoverWas Associated With The Schedule As One Of The Financial Success Metrics. Finally, Based On Findings, The Single Impact Of The Financial Performance Of The Previous Year On The Financial Performance Of The Current Year Was Shown. This Relationship Is Enhanced By Combining The Sophistication Of The Supply Chain Phase With The Financial Results Of The Previous Year. This Cumulative Impact On The Financial Results Of The Current Year Was Important For Inventory Turnover And COGS Variables.(Bengtsson Et Al., 2010)

A Framework Introduced In One Of The Research Was A Survey Used To Study Performance Measures And Metrics Used In A Supply Chain Environment. A Seven-Page Questionnaire Was Created And Sent To The CEO Of Each Company. Of The 150 Questionnaires, 20 Were Completed And Received. Following This, A Variety Of Analyses Were Carried Out On The Calculation Of Performance Metrics For Planning, Procurement, Distribution And Development. The Findings Of The Questionnaire Revealed That The Initiative To Control The Supply Chains Carefully Generated Financial Gains For The Participating Companies. From A Financial Viewpoint Alone, A Constructive Approach To SCM Is Advisable For Companies Looking To Boost Productivity (Gunasekaran Et Al., 2004).

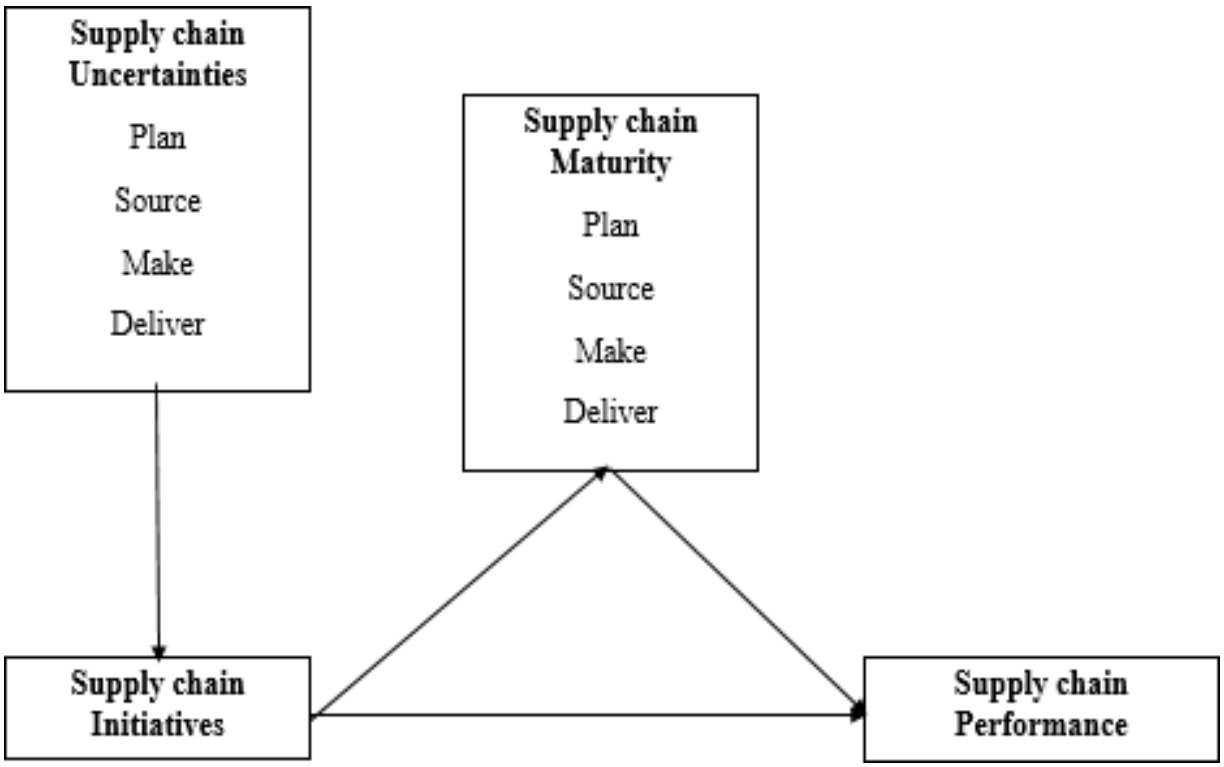
3. METHODOLOGY

From The Literature Study Made It Can Be Found That The Maturity Model For The Supply Chain Was Initially Build From Business Process Orientation Which Included Process Measure,Management, Job And View. The First Maturity Model For Supply Chain Management Was Built On The Concept Of Process Maturity With SCOR Framework By Archie Lockamy III And KevinMccormack In The Year 2004. The Validity Of The Model Was Proven Effectively And ProvedThat Has Maturity Level Increases The Performance Of Supply Chain Increases. The IndividualPerformance Measure Were Not Discussed In Details To Know The Impact On The Overall Performance. Followed By The SCOR Model There Were Multiple Model Developed By Different Authors Like CMM, Quick Scan Model, Supply Chain Capability Model, The Diagnostic Tool And More. All The Papers Define Their Model In Detail And How The Model Is Developed And SomePapers Explain How The Proposed Model Is Used To Identify The Improvements In The Supply Chain And Knowing The Current Maturity Level Of The Organization With Respect To The Industry Standards But The Impact Of The Maturity Level On The Organization's Supply Chain Performance Is Not Studied In Detail. The Supply Chain Maturity Impact On The Firms Supply Chain Practice Such As Plan, Source, Make, Deliver And Return, Operation Performance Such As Cost And ServiceLevel And Financial Performance Are Not Studied In Detail The Higher Maturity Level Helps InManaging Uncertainty Due To Disruptions In Information, Material And Money Are Not Touched. The Research Question Would Be Are These Aspects Are Studied In All Developing CountriesWould The Results Vary In Developing Countries Like India. What Is The Impact Of Uncertainty On Supply Chain Initiative Of The Small And Medium Scale Companies In Developing Countries LikeIndia? What Is The Impact Of Supply Chain Maturity Level In Performance Of Supply Chain? What Is Effect Of Supply Chain Initiatives On Maturity And Supply Chain Performance Of Organizations?

The Study Is Important Because Small And Medium Scale Companies Are The Major Key Players In Development Of The Country's Economy And They Are The Support System For The Large Companies And Uncertainty In The Supply Chain Of These Companies Will Affect The Supply ChainOf The Large Companies. So It Is Important That The Small Scale Companies Should Be Have High Maturity Level To Stay Flexible And Handle Any Uncertainties.

1. Research Framework: An Overview

Figure 1 Research Framework Overview



The Research Frame Work Consist Of Four Elements Such As Supply Chain Uncertainties, Supply Chain Initiatives, Supply Chain Maturity, And Supply Chain Performance. The Frame Work Helps In Model Building And Understand The Relationship Between The Variables To Be Studied. The Study Starts With The Relation Between Uncertainty And Supply Chain Initiative. Then Followed By The Link Between Three Variables Where Supply Chain Initiative Is Linked To Supply Chain Maturity To Know Whether Increase In Supply Chain Initiatives Will Increase The Maturity And In Turn Increase In Maturity Will Increase The Supply Chain Performance. And Supply Chain Initiative And Supply Chain Performance Is Linked To Find The Relation.

4. RESEARCH DESIGN

This Study Concentrates On Qualitative Research And Descriptive Research As The Overall Objective Of This Study Is To Understand The Impact Of Supply Chain Maturity In Supply Chain Performance And Profitability Of Small And Medium Scale Companies In India. A Descriptive Research Is Made In This Study Is To Know The Effect Of Maturity Level On Firms Supply Chain Performance And Its Ability To Handle Any Uncertainties. The Research Is Carried Out With Questionnaire Which Contains The Detailed Description Of The Variables.

Sampling Design

The Target Population Is The Small And Medium Manufacturing Companies In India Who Are Registered. The Convenient Sampling Method Is Used For Data Collection. The Respondents Are Employees In Those Companies Who Are Closely Working In Supply Chain.

Data Collection Method

Primary Data Collection Method Is Used Due To Accuracy And Reliability. The Data Collection Is Made By Survey Using A Questionnaire That Contains All The Variables. The Survey Is Done With Multiple Industry Not Focused On One Particular Industry To Have A Whole Insight Of Country's Small And Medium Size Companies. The Total Number Of Expected Responses Are From 100-150. The Questionnaire Is Created Using Google Forms And Distribute It As An Online Survey To All Qualified Respondents.

The Questionnaire Consist Of Multiple Sections That Collects Information Such As Basic Details Of Respondent And Company, Supply Chain Performance, Supply Chain Uncertainties, Supply Chain Initiatives, Supply Chain Integration, And Supply Chain Maturity. The Response Of Supply Chain Performance, Uncertainty And Maturity Are Collect With Respect To Supply Chain Practice Plan, Source, Make And Deliver. The Responses Are Collected Through Online Via Mail And Through Phone Calls. The Response Rate To Mail Was Very Less And Few Respondents Denied To Respond Because Of The Lengthy Questionnaire.

A Total Of 32 Response Were Collected Which Is Very Less Compared To The Expected Number Of Responses. The Response Are From Different Industries Like Automotive, Iron And Steel, Textile, And Notebooks. Most Of The Response Are From South India And Some From Other Parts. The Respondents Are People Working Closely In Supply Chain Of Companies And Some Are Proprietors.

5. DATA ANALYSIS & RELIABILITY TESTS

Analysis Of Data

The Analysis Of Data Is Done To Know The Reliability Of The Data And Validity Of The Model Generated. The PSPP Software Used To Find The Reliability Of Data And Warppls Is Used To Test The Model Generated. The Reliability Test Is Done To Know The Consistency Of The Measured Values And Validity Is Used To Know The Accuracy Of The Model Generated.

Reliability Test

The Reliability Test Is Carried Out With PSPP Software For All The Variables Such As Maturity, Uncertainty, Supply Chain Performance And Supply Chain Initiative. The Maturity, Uncertainty, And Performance Consist Of Four Sub Constructs Which Are Plan, Source, Make, And Deliver. For Example The Maturity Is Measured Under Four Process Of Supply Chain WhichAre Plan, Source, Make, And Deliver.

The Cronbach's Alpha Value Is Measured In The Analysis And If The Cronbach's Alpha Value IsGreater Than 0.70 Then It Clears That Data Is Reliable. The Data Is Loaded In PSPP Software As Comma Separated Value File And Pre- Analysis Process Are Done. Then The Reliability Test Is Carried One By One For All The Variables.

Results Of Reliability Test

Maturity

Maturity		
Dimensions	**No. Of Indicators**	**Cronbach'sAlpha Value**
Plan	5	0.86
Source	5	0.86
Make	5	0.85
Deliver	5	0.84

Table 1 Reliability Test Result Of Maturity

Uncertainty

Uncertainty		
Dimensions	**No. Of Indicators**	**Cronbach'sAlpha Value**
Plan	5	0.76
Source	4	0.78
Make	5	0.82
Deliver	5	0.8

Table 2 Reliability Test Result Of Uncertainty

Performance

Performance		
Dimensions	**No. Of Indicators**	**Cronbach'sAlpha Value**
Plan	5	0.93
Source	4	0.82
Make	6	0.91
Deliver	7	0.84

Table 3 Reliability Test Result Of Performance

Supply Chain Initiatives

Supply Chain Initiatives	
No. Of Indicators	**Cronbach's Alpha Value**
8	0.91

Table 4 Reliability Test Result Of Supply Chain Initiatives

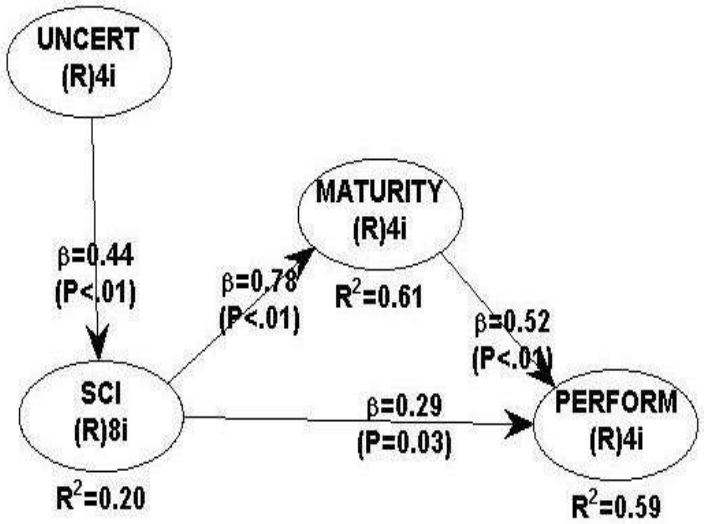
Then No Of Indicators Refers To The Number Of Measures In The Dimension I.E. Number Of Question Asked In The Questionnaire. From The Reliability Test Results It Is Found That Cronbach's Alpha Value Of All The Variable Are Greater Than 0.7 Which Shows That The Measured Values Are Reliable

Validity

The Validity Test Is Done With Warppls Software Which Runs On Matlab To Test The Accuracy Of The Developed Model. A Project Is Created In The First Step So That Project

Can Be Saved. The Data Is Loaded In The Software As Comma Separated Values And Then Followed By Data Pre-Processing Where The Null Values Are Found And Software Displays The Preview Of Value And Option To Proceed To Next Process For Model Generation. The Model Is Generated With Second Order Latent Variables That Are Created With The Scores Of First Order. Once The Model Is Generated The Model Is Structured And Tested For Accuracy. The Model Created And TestedIn Warppls Is Shown Below.

Fig 2 Warppls Model



The Model Consist Of Four Variables Uncertainties (UNCERT), Supply Chain Initiative (SCI), Supply Chain Maturity (MATURITY) And Supply Chain Performance (PERFORM). The Uncertainty Is Connected To Supply Chain Initiative And Supply Chain Initiative, Maturity And Performance Are Interconnect. Once The Model Is Tested The Result Is The Model Displayed With P Value, Beta Value And R^2 Value As Shown In The Above Figure 2. The P Value Determine The Significance Of The Variables. The P Value Is Found To Be Less Than 0.01 Between Uncertainty And Supply Chain Initiative, SCI And Maturity, And Maturity And Performance. The P Value Is 0.03 Between SCI And Performance

6. FINDINGS & SUGGESTIONS

The Analysis Is Done To Check The Reliability And Validity Of The Measured Variables. From The Results Of Reliability Test Of Variables In PSPP Software Shows That The Measured Value Are Reliable And The Cronbach's Alpha Value Of All The Variables Are Greater Than 0.70 Which Confirms The Reliability Of The Variables.

To Test The Validity Of The Variables A Model Is Created In Warppls Software And Tested. The Resultant P Values Between The Latent Variables Is Shown In Fig.3 It Is Found That All The Values Are Less Than 0.05 And The Variables Are In Significance With Each Other.

Fig 3 P Values Of Variables

P values

	SCI	MATURITY	UNCERT	PERFORM
SCI			0.002	
MATURITY	<0.001			
UNCERT				
PERFORM	0.033	<0.001		

Correlations among l.vs. with sq. rts. of AVEs

	SCI	MATURITY	UNCERT	PERFORM
SCI	(0.786)	0.728	0.270	0.607
MATURITY	0.728	(0.859)	0.069	0.740
UNCERT	0.270	0.069	(0.856)	0.065
PERFORM	0.607	0.740	0.065	(0.873)

Fig 4 Average Variance Extracted Values Of Variables

The Aves Score Of Latent Variables Is Shown In The Figure 3. The Average Variance Extracted Aves Are Show In Brackets In The Table And All The Values Are Greater Than 0.50 Which Confirms The Validity Of The Model.
From The Model It Is Found That As Uncertainties Increases The Firm's Supply Chain Initiatives Increases. The Increase In Supply Chain Initiatives Increases The Supply Chain Maturity Of The Firm And Supply Chain Performance. The Increase In Maturity Of Supply Chain Also Has A Significant Impact On Supply Chain Performance. Thus The Hypothesis Are Proved Where The Increase In Maturity Increases The Supply Chain Performance Of The Firm And Firms Able To Handle Uncertainties With Supply Chain Initiative Have Higher Maturity.

7. CONCLUSION AND MANAGERIAL IMPLICATIONS

In The Increasing Competitive Business Environment, Firms Are Constantly Working In Enhancing Their Supply Chain Performance. From The Secondary Study Made The Importance Of Supply Chain Performance Is Known And Its Effects Are Understood. The Supply Chain Performance Directly Affects The Performance Of The Organization. Then A Brief Description About Supply Chain Maturity Is Studied And Effect If Supply Chain Maturity And Uncertainty Is Studied From Various Researches. The History And Development Of Supply Chain Maturity Along With Various Supply Chain Maturity Model In Detail Are Studied. The Quantitative Study Is Made To Understand The Relationship Between Supply Chain Maturity, Performance And Uncertainties In The Business Environment. The Quantitative Study Is Made With Help Of PSPP And Warppls.

The Study Reveals That There Is Significant Relationship Between These Variables With The Testing Of Reliability And Validity Of Measures And Created Model. The Increase In Uncertainties Has An Effect On Supply Chain Initiatives Which In Turn Increases The Maturity Level Of Supply Chain Of The Firm And Also Increases The Supply Chain Performance. There Are Also Some Limitations In The Study The Quantitative Study Is Made Based On Only 32 Reponses. The Response Rate Is Less Due To The Length Of The Questionnaire Which Made Respondents To Neglect The Survey. And Most Of The Respondents Are From South India And Only Very Few Respondents Are Form Other Parts So The Study Does Not Represent The Whole Indian Companies Where The Results May Vary. Further Studies Can Be Made By Reducing The Length Of The Questionnaire And Having More Number Of Reponses So That The Whole Representations Of Indian Companies Can Be Studied In Detail.

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