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#### “ANALYSIS OF EFFECTIVENESS OF MATERIAL REQUIREMENT PLANNING (MRP) IN SUPPLY CHAIN”

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#### ABSTRACT

*To know the effectiveness of the method of MRP, this depends on a lot of factors. A survey was created which had twenty questions in it that survey was then sent to three different companies for getting responses from hundred employees. Later, an analysis was done using the SPSS software which was followed by obtaining the results to determine the Karl-Pearson correlation and to obtain regression curves between dependent and independent factors.*

*Key Words: MRP, SPSS, Likert scale, questionnaires, supply chain.*

#### I. INTRODUCTION

Some of the research papers related to MRP and the Likert scale were reviewed here; Dehal Ram Nishad and Mukesh Kumar Sahu 2015, presented in this research the MRP implementation in small-scale and manufacturing industries are very important and necessary. And when they apply the MRP method is beneficial and effective [1]. Nidaul Hasanati et al. 2019, this paper develops a system that plans when to required raw material and when not required. The system form is software-based, applying the MRP method to develop raw material ordering planning systems [2]. Dewi Sri 2021, research showed us the inventory planning of raw materials using MRP, considers the exponential smoothing method to find the appropriate forecast of the raw material in inventory planning [3]. Ankur Joshi et al. 2015 explained how resourceful the Likert scale is. It also told that the factors which were used in the Likert scale usually depend on several different other factors and it proves that if the Likert scale is used then better outcomes are easily attainable [4]. Wisam Al-Dulaime and Walid M. Emar 2019 explained the inventory cost reduction like holding cost and carrying cost using techniques EOQ and XYZ analysis method by taking questionnaires survey using Likert scale method [5]. Dr. D Sivasakthi and C.Poorni 2020, focuses on the product behavior, in which they collected responses based on the Likert scale, and the responses they received are the buying behavior towards the product which is satisfactory [6].

#### II. METHODOLOGY

A twenty questions based likert scale was used to obtain responses, then the receiving of those responses was followed by generating twenty individual factors such as familiarity, stocks profit order etc. which was then followed by the utilization of SPSS software to find correlation and regression between individual entities.[Questions formed were shown in the appendix].

Questions were designed based on the Likert scale. The inventor of the Likert scale is named Rensis Likert. The Likert scale is a psychometric scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research such that the Likert scale is often used interchangeably with the rating scale.

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The software used in the research is SPSS (Statistical Package for the Social Sciences) software this software helps us to perform data entry and analysis to create tables and graphs. SPSS is capable of handling large amounts of data and can perform all of the analyses.

### III. RESULTS

#### Correlation

**Correlations**

stocks	storage	orders	transportation	documents	investment	profit	specialsoftware	humaninterface	holdingcost	checking	manualwork	ordering	newtechnologies	EOQ	hiring	otherindustrialsector	overallexperience
.356**	.475**	.262**	.353**	.140	.350**	.034	.240**	.177*	-.030	.304**	.047	.136	-.121	-.061	.096	.217*	.034
<.001	<.001	.004	<.001	.082	<.001	.369	.008	.039	.383	.001	.320	.089	.115	.273	.171	.015	.367
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
-.032	-.308**	-.101	-.132	.037	-.118	.310**	-.134	-.053	.179*	.165	.281**	.026	.152	-.234**	-.119	.089	-.285**
.378	<.001	.158	.095	.356	.121	<.001	.093	.299	.037	.051	.002	.397	.065	.009	.118	.190	.002
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1	.484**	.079	.186*	.034	.376**	-.019	-.073	.493**	-.016	-.142	-.250**	.255**	.167*	.136	-.058	.132	-.250**
	<.001	.217	.032	.368	<.001	.424	.235	<.001	.438	.080	.006	.005	.048	.088	.283	.096	.006
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
.484**	1	.435**	.292**	.206*	.476**	-.035	.085	.421**	.132	-.180*	-.170*	.276**	-.018	.291**	.013	.204*	-.068
<.001		<.001	.002	.020	<.001	.365	.201	<.001	.096	.036	.046	.003	.429	.002	.450	.021	.251
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
.079	.435**	1	.106	.202*	.399**	.116	.099	.156	.074	-.005	.129	.070	.274**	.034	-.010	.144	-.039
.217	<.001		.146	.022	<.001	.124	.164	.061	.231	.479	.101	.244	.003	.367	.460	.077	.351
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
.186*	.292**	.106	1	.059	-.026	.036	.029	.037	-.191*	.198*	.031	.251**	-.208*	.110	.040	-.170*	-.020
.032	.002	.146		.281	.400	.360	.386	.356	.029	.024	.379	.006	.019	.137	.346	.045	.421
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
.034	.206*	.202*	.059	1	.198*	.192*	.098	-.111	.046	.030	-.003	.176*	.019	-.197*	-.157	.107	.047
.368	.020	.022	.281		.024	.028	.166	.136	.325	.383	.489	.040	.427	.025	.059	.144	.320
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
.376**	.476**	.399**	-.026	.198*	1	.162	.129	.222*	-.240**	-.213*	-.024	.178*	.173*	.085	-.075	.074	.042
<.001	<.001	<.001	.400	.024	.054	.101	.013	.008	.017	.406	.038	.042	.199	.229	.233	.338	
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
-.019	-.035	.116	.036	.192*	.162	1	.286**	.097	.036	.258**	.127	-.057	-.003	-.065	-.009	.086	-.054
.424	.365	.124	.360	.028	.054		.002	.169	.362	.005	.104	.286	.488	.262	.465	.199	.296
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

		familiarity	Usage	stocks	storage	orders	transportation	documents	investment	profit	specialsoftware	humaninterface	holdingcost	checking	manualwork	ordering	newtest
familiarity	Pearson Correlation	1	-.315**	.356**	.475**	.262**	.353**	.140	.350**	.034	.240**	.177*	-.030	.304**	.047	.136	
	Sig. (1-tailed)		<.001	<.001	<.001	.004	<.001	.082	<.001	.369	.008	.039	.383	.001	.320	.089	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Usage	Pearson Correlation	-.315**	1	-.032	-.308**	-.101	-.132	.037	-.118	.310**	-.134	-.053	.179*	.165	.281**	.026	
	Sig. (1-tailed)	<.001		.378	<.001	.158	.095	.356	.121	<.001	.093	.299	.037	.051	.002	.397	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
stocks	Pearson Correlation	.356**	-.032	1	.484**	.079	.186*	.034	.376**	-.019	-.073	.493**	-.016	-.142	-.250**	.255**	
	Sig. (1-tailed)	<.001	.378		<.001	.217	.032	.368	<.001	.424	.235	<.001	.438	.080	.006	.005	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
storage	Pearson Correlation	.475**	-.308**	.484**	1	.435**	.292**	.206*	.476**	-.035	.085	.421**	.132	-.180*	-.170*	.276**	
	Sig. (1-tailed)	<.001	<.001	<.001		<.001	.002	.020	<.001	.365	.201	<.001	.096	.036	.046	.003	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
orders	Pearson Correlation	.262**	-.101	.079	.435**	1	.106	.202*	.399**	.116	.099	.156	.074	-.005	.129	.070	
	Sig. (1-tailed)	.004	.158	.217	<.001		.146	.022	<.001	.124	.164	.061	.231	.479	.101	.244	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
transportation	Pearson Correlation	.353**	-.132	.186*	.292**	.106	1	.059	-.026	.036	.029	.037	-.191*	.198*	.031	.251**	
	Sig. (1-tailed)	<.001	.095	.032	.002	.146		.281	.400	.360	.386	.356	.029	.024	.379	.006	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
documents	Pearson Correlation	.140	.037	.034	.206*	.202*	.059	1	.198*	.192*	.098	-.111	.046	.030	-.003	.176*	
	Sig. (1-tailed)	.082	.356	.368	.020	.022	.281		.024	.028	.166	.136	.325	.383	.489	.040	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
investment	Pearson Correlation	.350**	-.118	.376**	.476**	.399**	-.026	.198*	1	.162	.129	.222*	-.240**	-.213*	-.024	.178*	
	Sig. (1-tailed)	<.001	.121	<.001	<.001	<.001	.400	.024		.054	.101	.013	.008	.017	.406	.038	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
profit	Pearson Correlation	.034	.310**	-.019	-.035	.116	.036	.192*	.162	1	.286**	.097	.036	.258**	.127	-.057	
	Sig. (1-tailed)	.369	<.001	.424	.365	.124	.360	.028	.054		.002	.169	.362	.005	.104	.286	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
specialsoftware	Pearson Correlation	.240**	-.134	-.073	.085	.099	.029	.098	.129	.286**	1	.207*	.042	.132	.067	-.287**	
	Sig. (1-tailed)	.008	.002	.226	.201	.164	.386	.168	.101	.002		.010	.299	.006	.264	.002	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The factor such as stocks, storage, orders, transportation, investment, special software, human interference, checking, were found to have maximum correlation with the factor of familiarity. Similarly, the factor of usage had maximum correlation with profit and manual work and stocks had the max correlation with familiarity, storage, transportation, investment, human interference, and ordering. Every other variable had this kind of case with some or the other variable or factor.

	Sig. (1-tailed)	.008	.093	.235	.201	.164	.386	.166	.101	.002		.019	.338	.095	.254	.002
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
humaninterference	Pearson Correlation	.177 <sup>*</sup>	-.053	.493 <sup>***</sup>	.421 <sup>***</sup>	.156	.037	-.111	.222 <sup>*</sup>	.097	.207 <sup>*</sup>	1	.336 <sup>***</sup>	-.107	-.320 <sup>***</sup>	.423 <sup>***</sup>
	Sig. (1-tailed)	.039	.299	<.001	<.001	.061	.356	.136	.013	.169	.019		<.001	.145	<.001	<.001
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
holdingcost	Pearson Correlation	-.030	.179 <sup>*</sup>	-.016	.132	.074	-.191 <sup>*</sup>	.046	-.240 <sup>***</sup>	.036	.042	.336 <sup>***</sup>	1	.247 <sup>***</sup>	.281 <sup>***</sup>	.134
	Sig. (1-tailed)	.383	.037	.438	.096	.231	.029	.325	.008	.362	.338	<.001		.007	.002	.092
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
checking	Pearson Correlation	.304 <sup>***</sup>	.165	-.142	-.180 <sup>*</sup>	-.005	.198 <sup>*</sup>	.030	-.213 <sup>*</sup>	.258 <sup>**</sup>	.132	-.107	.247 <sup>***</sup>	1	.469 <sup>***</sup>	-.021
	Sig. (1-tailed)	.001	.051	.080	.036	.479	.024	.383	.017	.005	.095	.145	.007		<.001	.417
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
manualwork	Pearson Correlation	.047	.281 <sup>***</sup>	-.250 <sup>***</sup>	-.170 <sup>*</sup>	.129	.031	-.003	-.024	.127	.067	-.320 <sup>***</sup>	.281 <sup>***</sup>	.469 <sup>***</sup>	1	-.222 <sup>*</sup>
	Sig. (1-tailed)	.320	.002	.008	.046	.101	.379	.489	.406	.104	.254	<.001	.002	<.001		.013
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
ordering	Pearson Correlation	.136	.026	.255 <sup>***</sup>	.276 <sup>***</sup>	.070	.251 <sup>***</sup>	.176 <sup>*</sup>	.178 <sup>*</sup>	-.057	-.287 <sup>***</sup>	.423 <sup>***</sup>	.134	-.021	-.222 <sup>*</sup>	1
	Sig. (1-tailed)	.089	.397	.005	.003	.244	.006	.040	.038	.286	.002	<.001	.092	.417	.013	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
newtechnologies	Pearson Correlation	-.121	.152	.167 <sup>*</sup>	-.018	.274 <sup>***</sup>	-.208 <sup>*</sup>	.019	.173 <sup>*</sup>	-.003	-.248 <sup>***</sup>	.237 <sup>***</sup>	.082	-.132	-.006	.267 <sup>***</sup>
	Sig. (1-tailed)	.115	.065	.048	.429	.003	.019	.427	.042	.488	.006	.009	.210	.095	.475	.004
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EOQ	Pearson Correlation	-.061	-.234 <sup>***</sup>	.136	.291 <sup>***</sup>	.034	.110	-.197 <sup>*</sup>	.085	-.065	-.030	.301 <sup>***</sup>	.005	-.237 <sup>***</sup>	-.239 <sup>***</sup>	.024
	Sig. (1-tailed)	.273	.009	.088	.002	.367	.137	.025	.199	.262	.384	.001	.480	.009	.008	.405
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
hiring	Pearson Correlation	.096	-.119	-.058	.013	-.010	.040	-.157	-.075	-.009	.007	-.018	.078	-.192 <sup>*</sup>	-.034	.038
	Sig. (1-tailed)	.171	.118	.283	.450	.460	.346	.059	.229	.465	.474	.428	.219	.028	.369	.355
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
otherindustrialsector	Pearson Correlation	.217 <sup>*</sup>	.089	.132	.204 <sup>*</sup>	.144	-.170 <sup>*</sup>	.107	.074	.086	.446 <sup>***</sup>	.322 <sup>***</sup>	.514 <sup>***</sup>	.015	.090	-.148
	Sig. (1-tailed)	.015	.190	.096	.021	.077	.045	.144	.233	.199	<.001	<.001	<.001	.439	.188	.071
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

4	-.073	.085	.099	.029	.098	.129	.286 <sup>***</sup>	1	.207 <sup>*</sup>	.042	.132	.067	-.287 <sup>***</sup>	-.248 <sup>***</sup>	-.030	.007	.446 <sup>***</sup>	.246 <sup>***</sup>
3	.235	.201	.164	.386	.166	.101	.002		.019	.338	.095	.254	.002	.006	.384	.474	<.001	.007
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3	.493 <sup>***</sup>	.421 <sup>***</sup>	.156	.037	-.111	.222 <sup>*</sup>	.097	.207 <sup>*</sup>	1	.336 <sup>***</sup>	-.107	-.320 <sup>***</sup>	.423 <sup>***</sup>	.237 <sup>***</sup>	.301 <sup>***</sup>	-.018	.322 <sup>***</sup>	-.242 <sup>**</sup>
9	<.001	<.001	.061	.356	.136	.013	.169	.019		<.001	.145	<.001	<.001	.009	.001	.428	<.001	.008
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1	-.016	.132	.074	-.191 <sup>*</sup>	.046	-.240 <sup>***</sup>	.036	.042	.336 <sup>***</sup>	1	.247 <sup>***</sup>	.281 <sup>***</sup>	.134	.082	.005	.078	.514 <sup>***</sup>	-.041
7	.438	.096	.231	.029	.325	.008	.362	.338	<.001		.007	.002	.092	.210	.480	.219	<.001	.344
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	-.142	-.180 <sup>*</sup>	-.005	.198 <sup>*</sup>	.030	-.213 <sup>*</sup>	.258 <sup>**</sup>	.132	-.107	.247 <sup>***</sup>	1	.469 <sup>***</sup>	-.021	-.132	-.237 <sup>***</sup>	-.192 <sup>*</sup>	.015	-.059
1	.080	.036	.479	.024	.383	.017	.005	.095	.145	.007		<.001	.417	.095	.009	.028	.439	.280
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	-.250 <sup>***</sup>	-.170 <sup>*</sup>	.129	.031	-.003	-.024	.127	.067	-.320 <sup>***</sup>	.281 <sup>***</sup>	.469 <sup>***</sup>	1	-.222 <sup>*</sup>	-.006	-.239 <sup>***</sup>	-.034	.090	.013
0	.006	.046	.101	.379	.489	.406	.104	.254	<.001	.002	<.001		.013	.475	.008	.369	.188	.450
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6	.255 <sup>***</sup>	.276 <sup>***</sup>	.070	.251 <sup>***</sup>	.176 <sup>*</sup>	.178 <sup>*</sup>	-.057	-.287 <sup>***</sup>	.423 <sup>***</sup>	.134	-.021	-.222 <sup>*</sup>	1	.267 <sup>***</sup>	.024	.038	-.148	-.107
7	.005	.003	.244	.006	.040	.038	.286	.002	<.001	.092	.417	.013		.004	.405	.355	.071	.144
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	.167 <sup>*</sup>	-.018	.274 <sup>***</sup>	-.208 <sup>*</sup>	.019	.173 <sup>*</sup>	-.003	-.248 <sup>***</sup>	.237 <sup>***</sup>	.082	-.132	-.006	.267 <sup>***</sup>	1	.022	-.045	-.030	-.187 <sup>*</sup>
5	.048	.429	.003	.019	.427	.042	.488	.006	.009	.210	.095	.475	.004		.413	.327	.385	.031
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	.136	.291 <sup>***</sup>	.034	.110	-.197 <sup>*</sup>	.085	-.065	-.030	.301 <sup>***</sup>	.005	-.237 <sup>***</sup>	-.239 <sup>***</sup>	.024	.022	1	.063	-.101	.084
9	.088	.002	.367	.137	.025	.199	.262	.384	.001	.480	.009	.008	.405	.413		.266	.159	.203
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	-.058	.013	-.010	.040	-.157	-.075	-.009	.007	-.018	.078	-.192 <sup>*</sup>	-.034	.038	-.045	.063	1	.073	.313 <sup>***</sup>
8	.283	.450	.460	.346	.059	.229	.465	.474	.428	.219	.028	.369	.355	.327	.266		.235	<.001
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	.132	.204 <sup>*</sup>	.144	-.170 <sup>*</sup>	.107	.074	.086	.446 <sup>***</sup>	.322 <sup>***</sup>	.514 <sup>***</sup>	.015	.090	-.148	-.030	-.101	.073	1	.127
0	.096	.021	.077	.045	.144	.233	.199	<.001	<.001	<.001	.439	.188	.071	.385	.159	.235		.104
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

checking	Pearson Correlation	.304**	.165	-.142	-.180*	-.005	.198 <sup>†</sup>	.030	-.213*	.298**	.132	-.107	.247**	1	.469**	-.021
	Sig. (1-tailed)	.001	.051	.080	.036	.479	.024	.383	.017	.005	.095	.145	.007		<.001	.417
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
manualwork	Pearson Correlation	.047	.281**	-.250**	-.170*	.129	.031	-.003	-.024	.127	.067	-.320**	.281**	.469**	1	-.222 <sup>†</sup>
	Sig. (1-tailed)	.320	.002	.006	.046	.101	.379	.489	.406	.104	.254	<.001	.002	<.001		.013
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
ordering	Pearson Correlation	.136	.026	.255**	.276**	.070	.251**	.176*	.178*	-.057	-.287**	.423**	.134	-.021	-.222 <sup>†</sup>	1
	Sig. (1-tailed)	.089	.397	.005	.003	.244	.006	.040	.038	.286	.002	<.001	.092	.417	.013	
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
newtechnologies	Pearson Correlation	-.121	.152	.167*	-.018	.274**	-.208*	.019	.173*	-.003	-.248**	.237**	.082	-.132	-.006	.267**
	Sig. (1-tailed)	.115	.065	.048	.429	.003	.019	.427	.042	.488	.006	.009	.210	.095	.475	.004
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
EOQ	Pearson Correlation	-.061	-.234**	.136	.291**	.034	.110	-.197*	.085	-.065	-.030	.301**	.005	-.237**	-.239**	.024
	Sig. (1-tailed)	.273	.009	.088	.002	.367	.137	.025	.199	.262	.384	.001	.480	.009	.008	.405
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
hiring	Pearson Correlation	.096	-.119	-.058	.013	-.010	.040	-.157	-.075	-.009	.007	-.018	.078	-.192*	-.034	.038
	Sig. (1-tailed)	.171	.118	.283	.450	.480	.346	.059	.229	.465	.474	.428	.219	.028	.369	.355
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
otherindustrialsector	Pearson Correlation	.217*	.089	.132	.204*	.144	-.170*	.107	.074	.086	.446**	.322**	.514**	.015	.090	-.148
	Sig. (1-tailed)	.015	.190	.096	.021	.077	.045	.144	.233	.199	<.001	<.001	<.001	.439	.188	.071
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
overalllexperience	Pearson Correlation	.034	-.285**	-.250**	-.088	-.039	-.020	.047	.042	-.054	.246**	-.242**	-.041	-.059	.013	-.107
	Sig. (1-tailed)	.367	.002	.006	.251	.351	.421	.320	.338	.296	.007	.008	.344	.280	.450	.144
	N	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

### Curve Fit

#### Model Description

Model Name	MOD_2
Dependent Variable	1 profit
	2 Usage
	3 stocks
	4 storage
	5 orders
	6 transportation
	7 documents
	8 investment
	9 specialsoftware
	10 humaninterference
	11 holdingcost
	12 checking
	13 manualwork
	14 ordering
	15 newtechnologies
	16 EOQ
	17 hiring
	18 otherindustrialsector
	19 overalllexperience
Equation	1 Linear
Independent Variable	familiarity
Constant	Included
Variable Whose Values Label Observations in Plots	Unspecified

Variable Processing Summary

Variables																	
Dependent																	Independent
stocks	storage	orders	transportation	documents	investment	specialsoftware	humaninterference	holdingcost	checking	manualwork	ordering	newtechnologies	EOQ	hiring	otherindustrialsector	overallexperience	familiarity
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Case Processing Summary

N	
Total Cases	100
Excluded Cases <sup>a</sup>	0
Forecasted Cases	0
Newly Created Cases	0

a. Cases with a missing value in any variable are excluded from the analysis.

Variable Processing Summary

Variables																	
Dependent																	Independent
	profit	Usage	stocks	storage	orders	transportation	documents	investment	specialsoftware	humaninterference	holdingcost	checking	manualwork	ordering	newtechnologies		
Number of Positive Values	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Number of Zeros	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Negative Values	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Missing Values	User-Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	System-Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Model Summary and Parameter Estimates

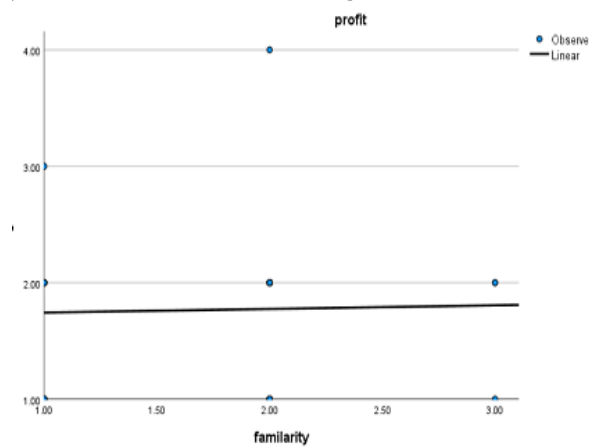
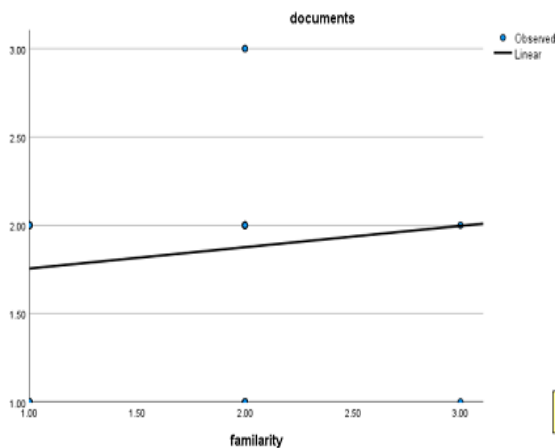
Dependent Variable: profit

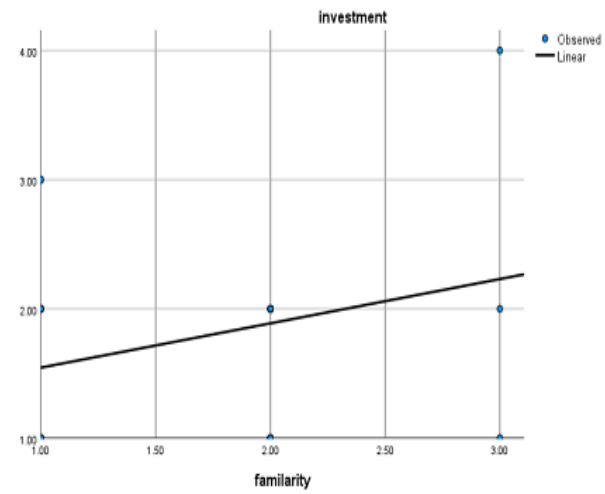
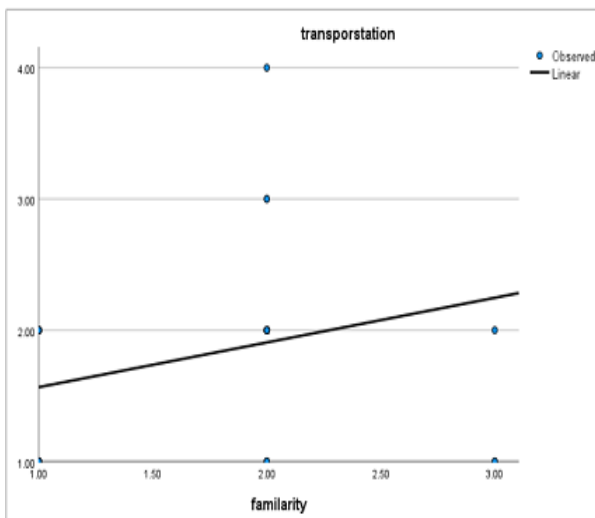
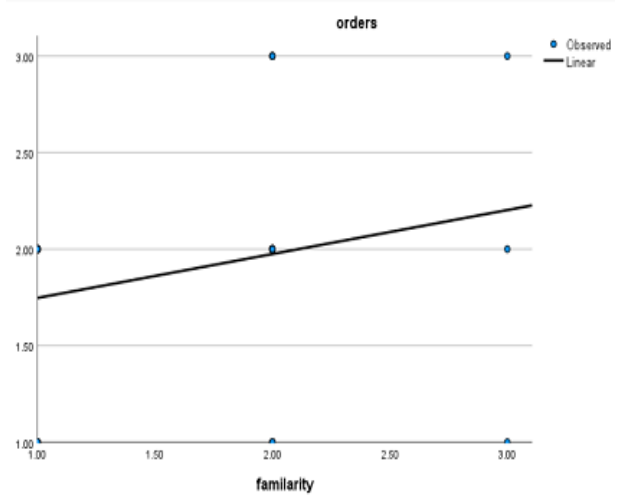
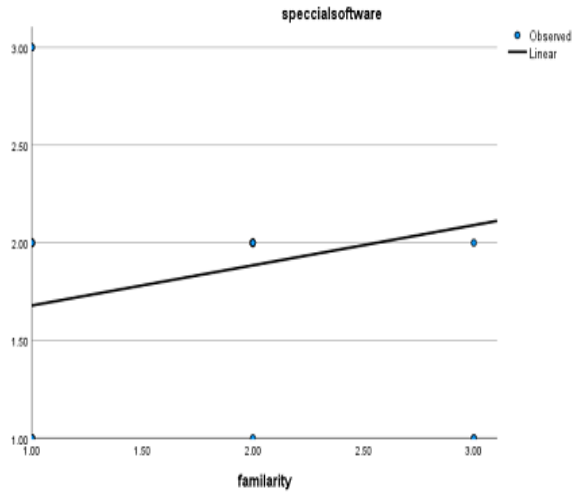
Equation	R Square	F	Model Summary			Parameter Estimates	
			df1	df2	Sig.	Constant	b1
Linear	.001	.112	1	98	.739	1.712	.031

The independent variable is familiarity.

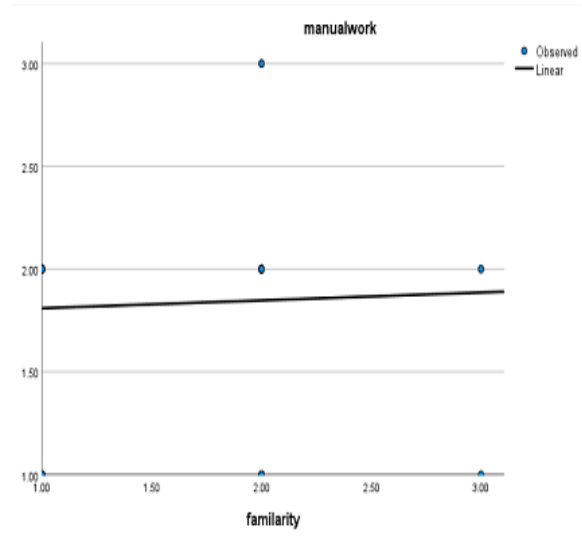
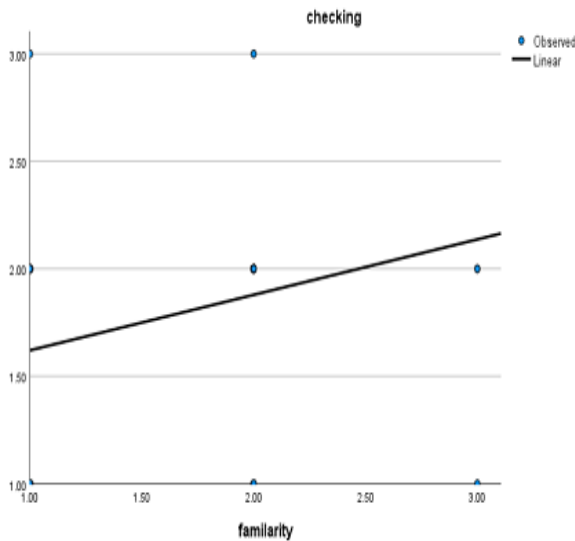
Variable Processing Summary

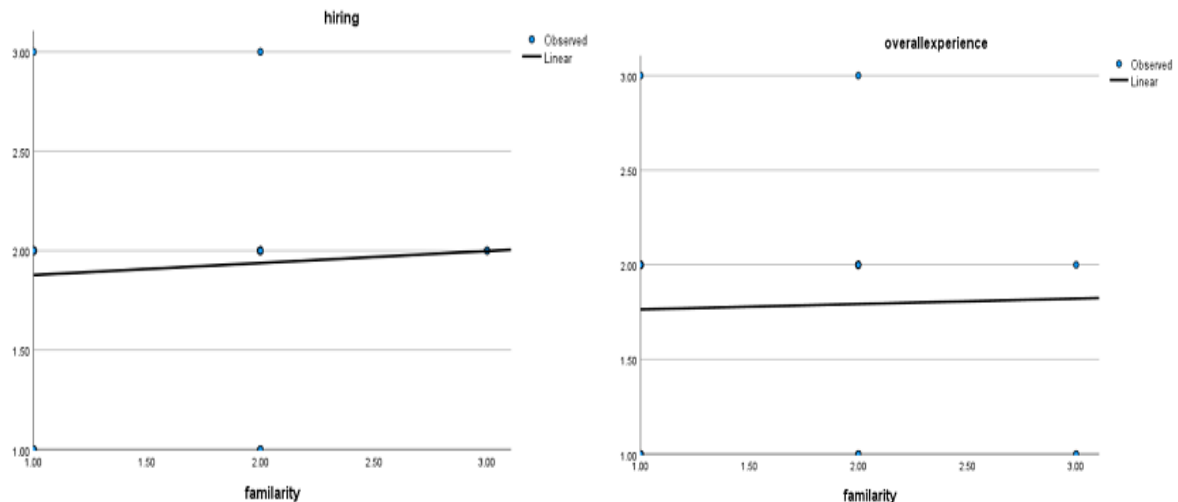
Variables																	
Dependent																	Independent
stocks	storage	orders	transportation	documents	investment	specialsoftware	humaninterference	holdingcost	checking	manualwork	ordering	newtechnologies	EOQ	hiring	otherindustrialsector	overallexperience	familiarity
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





Note : familiarity is the independent factor





The factors which are highly dependable on familiarity are profit , orders , transportation, documents , investment , special software , checking , manual work , hiring , overall experience.

#### IV. CONCLUSION

It is quite depictable from their search that there were numerous factors affecting the effectiveness of material requirement planning for example cost of transportation, extra lead time, extra holding cost etc.

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## APPENDIX

Questions which were sending for the survey are shown below:-

1 Company is familiar with the method of material requirement planning?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

2 MRP methods must be used in the company?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

3 If there any sudden requirement of the raw material company has enough stocks due to MRP?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

4 The company has enough storage facilities for fulfilling the task of material requirement?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

5 The company can complete orders within a certain time limit because of their stock?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

6 Transportation cost remains constant while ordering raw materials, for a substantial duration and negligibly affects the profitability?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

7 It is required to do pen and paper-based documentation while doing MRP?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

8 The company must use special software dedicated to MRP?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

9 Investments done on MRP and its required facilities, does not lead to a loss in the future?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

10 MRP is efficient in increasing the profitability of the business?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

11 Even though special software is used, human interference is required for Material Requirement Planning (MRP)?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree

12 Holding cost does not affect much on the amount of profit?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

13 Reports gathered from the activity of material planning should be checked weekly?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

14 Using software for material requirement planning is better than doing it manually?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

15 Raw materials should be ordered from a nearby distance so that lead time doesn't get affected very much?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

16 Company must adopt new technologies for material required planning to cope up with latest market trends?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

17 Your company must use the method of Economic Order Quantity (EOQ)?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

18 While hiring a new employee he must be asked to show his skills which can be used for MRP?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

19 Method of MRP can be used in any industrial sector, such as manufacturing industries and others as well?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree

20 The overall experience with material required planning is rewarding and very satisfying?

1 \_\_\_\_\_ 2 \_\_\_\_\_ 3 \_\_\_\_\_ 4 \_\_\_\_\_ 5 \_\_\_\_\_  
Strongly Agree Indifferent Disagree Strongly Disagree  
Agree