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The Clothing Disposal Behavior in Pakistan: A Study of Young Consumers

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Abstract

The Purpose of this study is to examine the behavior young consumer clothing disposal behavior, how young consumer disposed of their unwanted or used clothes in Pakistan. Historically, extensive research has explored the dimensions of young consumer behavior in the context of buying behavior. Therefore, little research is conducted on clothing disposal behavior, while examining the relationship between young consumers' clothing disposal behavior towards donation to charities, give away to friends and family, social motivation and social responsibility. Quantitative study design was conducted among young respondent responded total of 440 (aged 18-34). They were selected by using convenience sampling technique. Data has been collected through an online survey and analyzed through SPSS. Results indicated that there is positive significant relationship between young consumers' clothing disposal behavior towards donation to charities, give away to friends and family, social motivation and social responsibility. The findings are comprehensively evaluated and implications in terms of theory and practice are effectively drawn.

Key Words: Young Consumers, Clothing Disposal, Social Responsibility, Friends and Family

Introduction

This paper was concerned with gaining inclusive insight into young consumer clothing disposal behaviors; the purpose of the paper is to dire need to contemplate on how the youth segment consume their undesired clothes. Disposal Behavior found to be the strongest predicator for donating clothes to charity and give away to friends and family. Young consumer attitude on clothing disposal behavior is important, as they have effect on the lifespan of clothes. They likely to donate or give away to their friends and family. The issue of young consumers clothing disposal behavior is a moderately new topic of attention among scholars (Birtwistle & Moore, 2007). The paper on disposal is specifically important in context of clothing; where things are not sustainable products like house or car, they don't benefit consumer over long period of time. In clothing, the word disposal refers to simply give away, reused or donation to charity. In the study by Koch and Domina (1997), the most

usually associated reason for the discard behavior of clothes is that it not only meets up individual want but also strength up the relationship between givers and receivers. Consumers get rid of clothes to create space in the closet. In a study on used clothing donation behavior found that consumers have discarded used clothing through donations create space in the closet and alleviate feelings of guilt that came from buying clothes that were rarely used and had previous purchase errors (Ha-Brookshire and Hodges, 2009). Participants in this study indicated that they donate to charities or giving to friends and the family were the most common disposal practices conducted a survey by mail requesting the use of existing disposal methods and reasons for clothing disposal (Koch and Domina, 1999). Social motivation is a positive attitude in perspective to young consumer's behavior and influences society behavior. Young consumers are inclined to support and improve the society values. Giving to others to feel better about oneself or because the donor collects benefits in terms of status, reputation, and incentives (Van and Wiepking, 2013). Other studies have also found that social motivation have an impact on consumer disposal methods (Daneshvary et al., 1998; Domina and Koch, 1999). Socially responsible is being self-sacrificing or self-serving. Studies have shown that the desire to give to or help (donating manners) is often seen as a social obligation or social responsibility that fulfills a people desire to help others (White and Peloza, 2009; Knutsson et al, 2013). According to Morgan and Birtwistle (2009), it was observed that consumer awareness in terms of societal responsibilities is significantly positive in relation to the clothing disposal behavior. The outcomes give detail that customers who feel worried about social issues, would eventually make an endeavor for disposing of their unwanted clothes through donating to charities and supporting the less privileged.

The objective of this study is to investigate the young consumer clothing disposal behavior it will enable us to see how young consumers utilize their unwanted clothes, Serval pervious researchers encountered limitations to their studies about clothing disposal behavior because most of the scholar's paid more attention to consumer clothing purchasing behavior. Research on consumer social responsibility, social motivation, donation to charity and give away to friends and family behind clothing disposal behavior is limited.

Secondly, this study provides the evidence on Pakistani context where study on young consumer clothing disposal behavior in inadequate. There is very little research on young consumer clothing disposal behavior, but there is no comprehensive overview or assessment of these studies in Pakistan. Therefore, this research aims to evaluate a series of factors that impact clothing disposal behavior among the young society of Pakistan. The Rest of this paper is divided into four sections. Section one explains literature review, while section two focused to provide deeper understanding of mythology process and steps involved in young consumer clothing disposal behavior. Section three presents the finding, while last section discusses findings and draw conclusion

Literature Review

Attitude of Young Consumer Clothing Disposal Behavior

Disposal in this paper highlights the act of discarding clothes, i.e. the last of stage of the clothing with the present owner, regardless of whether the clothing is dispose of as waste, give to donation or giveaway to friends and family . Consumers' clothing disposal behavior is important as society point of view. They decide when and where the used clothing is delivered and, therefore, determine the lifespan of clothes. Some research on consumers' clothing disposal activities survive, expect there is no study on the attitude of young consumer clothing disposal behavior made in Pakistan. The research suggests that are many different features of what motivated the young consumers clothing disposal behavior. There are four ways that seek to explain consumer disposal behavior in Pakistan that are in the form of donations to charity, give away to the close circle involving; friends, family and acquaintances, social responsibility and social motivation. The first investigation to analyze the disposal clothing behavior as part of the clothes used process the researcher explained that the consumption of clothes consists of acquiring clothes, putting it in the list and discarding outfit (Winakor, 1969). It is stated that 'Fashion can root to a person discard a clothes that would otherwise be useful and buy a new one" (page 633). The issue of young consumers clothing disposal behavior is a moderately new topic of attention among scholars (Birtwistle & Moore 2007). Morgan and Birtwistle (2009) found that young consumers, who had disposing habits, were more likely to donate discarded or used clothes to charity. Shim (1995) conclude an investigating study on clothing disposal behavior. The authors discovered that, in conclude with the purpose behavior of young consumer disposal behavior, the social attitude had a stronger impact on consumers. Koch and Domina (1997) examined consumer use of accessible clothing disposal options. The researchers suggest that the gender and society responsibility influenced the choice of method of disposal (Domina & Koch, (1998). Although there is no research accessible on how extensive a young consumer considers his clothing behavior, many of them do not wear cheap clothes due to low quality or new fashion or because the clothes were bought for a unique event (Morgan & Birtwistle, 2009). Therefore, this study aims to shed some light on some factors that affect clothing behavior among young consumer in Pakistan.

Donation to Charity

The term donate is often used something that is given to a charity. In cloth disposal literature it portrays as a person gives his or her clothes to needy and deserving people (Ha-Brookshire and Hodges, 2009; Shim, 1995; Stephens, 1985). This supports the attitude toward clothing disposal, and, hence, influences the clothing disposal behavior. In this study, respondents agreed that the donation of clothing gives pleasure to people and that is important donate unwanted clothes to help those in need. Clothing donation is made using a range of rearranging channels. The simplest form, donation involves passing clothing items to needy and helping them will make the consumers feel better and satisfied. Most of these consumers donate their dresses twice a year (Koch and Domina, 1999). Consumers feel guilty when they selects the clothes to be donated for cleaning because they think it is so useless or unwanted (Ha-Brookshire and Hodges, 2009). The scholars found that consumer clothing disposal attitudes strongly associated with the intentions of donation (Fishbein and Ajzen, 1980). This paper details that the more a person's attitude is favorable to a specific behavior, the

more likely he or she has intentions to perform the behavior .The more a person's attitude is positive towards the, the donation or give away of the dress, the more likely he or she intends to engage in these methods of disposing clothes. On the other side, a consumer with a more pessimistic attitude towards disposal of clothing is less inclined to discard clothing without contemplation. The donation concerned the attention because it is likely to the method of primary disposal in developed societies (Bianchi and Birtwistle, 2010; Harrell and McConachie, 1992; Morgan &Birtwistle, 2009).

Giving Away to Family and Friends

Give away is another way to dispose. In giveaway clothes are passed to friends, family members, neighbors and other known people. Clothing is exchanged for clothing, usually in formal and informal meetings and events between friends, siblings, cousins, neighbors or other known acquaintance. Giving away to family, friend's sibling, cousins are considered by consumers the most common methods of clothing disposal (Birtwistle and Moore, 2006). Giveaway can also be seen as a morally driven form of behavior, particularly when young consumers have existing concern for the society (Lord, 1994). Giveaway behaviors are led by different factors, including the affiliation state of a person, the sense of belonging and how they appeal for giveaway is framed (Aquino and Reed, 2002; Lee and Shrum, 2012; Blanco, MacDonnell and Ellard, 2012). Where the way to give can be closely related to advantage, how to know the receiver or prove empathy with the receiver, give the motivation have increased (White et al, 2012). However, the desire to help needy is not the same in all people (Cialdini et al, 1987; Lastovicka et al, 1999; Sousa et al, 2010).

Social Motivation

Social motivation communicates to the person need to interact with other person and be accepted by them. These communications are considered social behaviors that directly or indirectly are directed to other consumer to request a response. Social motivated consumers are socially pure and selfless in giving donation to charity Social motivation can affect the behavior; more socially desirable person tends to dispose in a manner to keep up with the social image while a person whose social desirability is very low tends to dispose differently (Kacen & Lee, 2002). The research suggests that there are various different ways to motivate consumer charitable behavior (Osili et al.2011; Van Leeuwen & Wiepking 2013). According to Social exchange theory; Humans (1958) and Emerson (1976) suggests that ''we give in order to receive''. However, what one is looking to receive. The idea of feeling good about giving others (Prendergast and Maggi, 2003) that is, the joy experienced by giving it due significance. Clothing fashion item can be disposed from the wardrobe of an individual because they represent outdated styles or because the consumer is no longer interested in keeping them (Shim, 1995). Moreover, Koch and Domina (1999) noted that young consumer clothing can be motivated being an outdated style, the boredom of those who wear it with the object, or because of it the object is consumed. In this regard, Birtwistle and Moore (2006) found that the reasons for the consumer arrangement fashion items included its low quality, the arrival of a new fashion or its event specific nature (i.e. clothing purchased for a single event). Socially motivation factors push consumers to perform a particular activity for pleasure or satisfaction of participation instead of its advantages. Social motivation has the impact in the society. Social motivation directly influences consumers' clothing disposal behavior. However, it has influence in the society and

concern of the consumer that affects the clothing disposal behavior (Brosdahl & Carpenter, 2010). Socially motivation is an important factor that determines the intrinsic motivation, and it acquired from a cultural perspective within personal life and inclined to support and improve the society values (Kollmuss & Agyeman, 2002).

Social Responsibility

Social responsibility is an act for helping others and enhancing individual's social standing. It is a moral framework and suggests that, it is an organization or an individual, responsibility to act for the advantage of society or people in general. The journalism on the social responsibility for young consumer disposal behaviors, develop regarding the specific charitable and give away motivations account for association between the consumers' mannerism towards donation and give away behavior and intentions. Socially responsible is being self-sacrificing or self-serving. Studies have shown that the desire to give to or help (donating manner) is often seen as a social obligation or social responsibility, incredible that fulfill a people desire and help others (White and Peloza, 2009; Knutsson et al, (2013). This study describes as the behavior of a consumer which is based to maximize beneficial impact in the society through clothing disposal behavior. A socially responsible consumer help society through clothing donation as it's our responsibility to help needy people. Furthermore, a socially responsible consumer believes both the society and people is important (Briggset al., (2010). Social responsibility is a social pressure to act or to behave and it involved external and internal factors (Ajzen, 1991, p.188). Both standards are more important in influencing certain moral behaviors. The external norm is that people expect their family, friends, neighbor and known people behave the same way they do. Internal factors are as important as external. Internal factor involved being self-sacrificed, pleased and satisfied when you give charity to deserving people. Subsequently, Bianchi and Birtwistle (2010) studied the influence of three characteristics of the consumer (e.g. fashion innovation, community values, experience) in clothing disposal method (i.e. give away, donate to charity) selected by young consumers. They have discovered that it is the innovation of fashion, which it represents a self-oriented reason and society awareness, which is a reason oriented towards others has positively influenced the donating clothes to charity and give away clothes to acquaintances. This collection of research point indicates the fact that young consumer seems to donate for personal reasons. The general attitudes related to motivation and responsibility to donate clothes are helping others, helping the community and improving one's own social position can influences attitude on where to donate clothes to charity. Subsequently, these attitudes are probability of predicting involvement in behaviors related to these attitudes (Park et al & Chaiken, 1993). Young consumers' responsibility increases to establish towards socially responsible behavior. Social Responsibility has strongly positive influences in the willingness to donate clothes (Kollmuss and Agyeman, 2002).

Conceptual Framework of Young Consumer Clothing Disposal Behavior
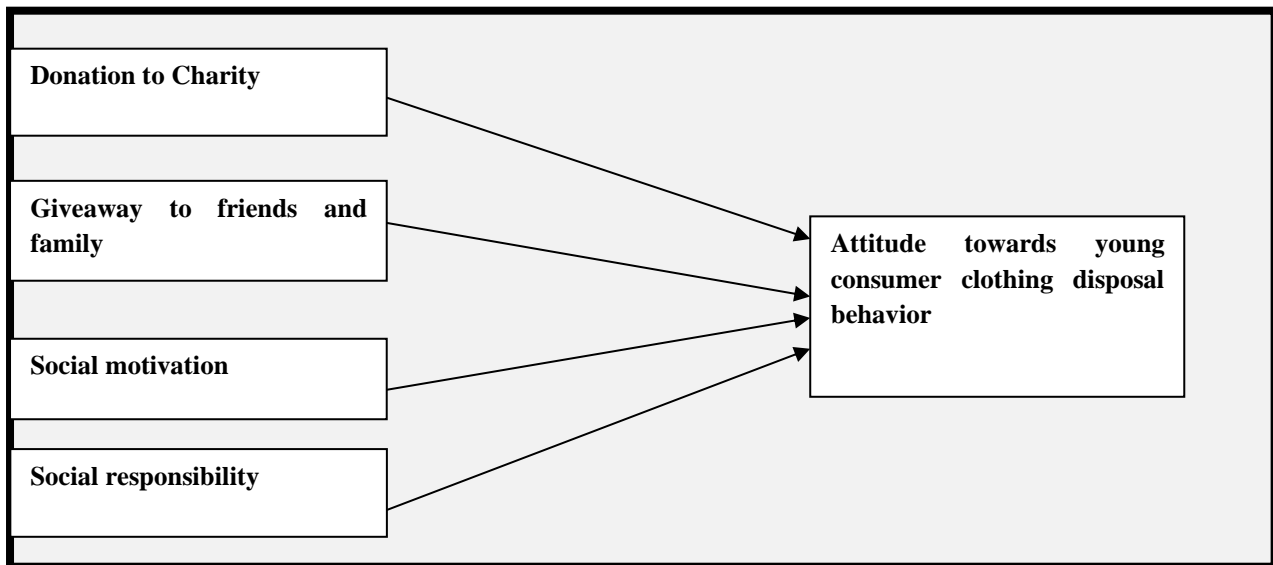
Figure: 1

Hypotheses of Study

H1: There is a positive significant relationship exists among donation to charity and young consumer's clothing disposal behavior.

H2: There is a positive significant relationship exists among giveaway to friends and family and young consumer's clothing disposal behavior.

H3: There is a positive significant relationship exists among social motivation and young consumer's clothing disposal behavior

H4: There is a positive significant relationship exists among social responsibility and young consumer's clothing disposal behavior.

Research Desgin and Methodology

Quantitative research design was used in this research, data was conveniently conducted through online questionnaires surveys. These questions were designed according to the variables of the study in hand for observing the attitude of young consumer clothing disposal behavior. There were 440 online young participants between the ages 18-34. This information include age Gender, Occupations, Family income, Family size, No of housekeepers , Qualification , Marital status, awareness to

clothing disposal behavior and willingness to donating clothes. The percentage contribution of male group was 44% and female was 58%. An online questionnaire was designed using SPSS software to undertake the reliability test. For examining the hypothesized associations among the variables,

person correlation analysis has been conducted. A regression analysis has also been conducted for evaluating the attitude of young consumer clothing disposal behavior. The independent variables of the study were four in numbers (Donation to Charity, Give away to friends and family, social motivation and social responsibility) and young consumer clothing disposal behavior is a dependent variable. The research instruments used in this study were adapted from Domina and Koch (1999); Shim (1995); File and Prince (1998); Clary et al. (1998); Winakor, (1969), Briggset al. (2010); Winakor, (1969) and few additional adjustments were made to questionnaire. All factors except the demographics variables in the questioners will be measured using five point Likert Scale ranging from Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree=4, Strongly Agree =5

Descriptive Statistics

The table depicts that the total number of females were 225 out of 440 making it 58% of the total sample and the number of males were 185 out of 440, making it 42% of overall sample size.

Table 1: **Gender**

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	185	42.0	42.0	42.0
Female	255	58.0	58.0	100.0
Total	440	100.0	100.0	

As the Target group of the study is generation-Y so for data analysis purpose the sample was divided in four age groups. The rang of first age group was 18-20 Y, range of second group was 21-25 Y rang of third group was 26-30 Y and the last group was 31-34 Y. The contribution of each group was 6%, 53%, 36% and 5% respectively.

*Table 2:***Age**

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-20	25	5.7	5.7	5.7
21-25	233	53.0	53.0	58.6
26-30	162	36.8	36.8	95.5
31-34	20	4.5	4.5	100.0
Total	440	100.0	100.0	

Demonstration of the respondent's age from the range of first age group was 18-20 Y, range of second group was 21-25 Y rang of third group was 26-30 Y and the last group was rang 31-34 Y. The contribution of each age group was 5.7%, 53%, 36.8% and 4.5% respectively.

*Table 3:*Qualification

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Fsc	20	4.5	4.5	4.5
Bachelor	168	38.2	38.2	42.7
Master	186	42.3	42.3	85.0
M.Phil	51	11.6	11.6	96.6
Others	15	3.4	3.4	100.0
Total	440	100.0	100.0	

For the purpose fact analysis the respondent were divided into groups of their education. The groups were, Fsc, Bachelors Masters, M.phil and others. The frequencies were 20,168, 186, 50 and 18. The percentage contributed of the groups were 4.5 %, 38.2 %42.3 %, 11.6% and 3.4 %

*Table 4:*Family Income

Family Income	Frequency	Percent	Valid Percent	Cumulative Percent
0-10,000	7	1.6	1.6	1.6
10,000-20,000	10	2.3	2.3	3.9
20,000-30,000	58	13.2	13.2	17.0
30,000-40,000	92	20.9	20.9	38.0
40,000-50,000	70	15.9	15.9	53.9
more than all above	203	46.1	46.1	100.0
Total	440	100.0	100.0	

The statistics Analysis of family income respondents were segregate into six different categories that include the range from 0-10,000, 10,000-20,000, 20,000-30,000, 40,000-50,000 and more than all above. The percentage of the family income range from 1.6%, 2.3%, 13.2%, and 20.9% 15.9% and 46.1%.

*Table 5:*Occupation

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Student	210	47.7	47.7	47.7
Teacher	98	22.3	22.3	70.0
Businessman	60	13.6	13.6	83.6
Armed Service	19	4.3	4.3	88.0
Government Service	9	2.0	2.0	90.0
Doctor	19	4.3	4.3	94.3
Others	25	5.7	5.7	100.0
Total	440	100.0	100.0	

For the purpose on analysis occupation of the respondents were categorized in seven different occupation, Student, Teacher, Businessman, Armed Services, Government services, Doctors, and others. The percentage of the above occupations were 4.7%,22.3%,13,6%,4.3%,2.0%, 4.3%, 5.7%

*Table 6:*Family Size

Family size	Frequency	Percent	Valid Percent	Cumulative Percent
2	9	2.0	2.0	2.0
3	110	25.0	25.0	27.0
4	93	21.1	21.1	48.2
5	49	11.1	11.1	59.3
6	122	27.7	27.7	87.0
6+	57	13.0	13.0	100.0
Total	440	100.0	100.0	

The above table shows the interpretation respondent's family size. The participants were categorized in six different categories that are range from 2, 3, 4, 5, 6 and 6+. The percentage of the family size was 2%, 25%, 21.1%, 11.1%, 27.7% and 13%.

*Table 7:*No Of Housekeepers

No Of Housekeepers	Frequency	Percent	Valid Percent	Cumulative Percent
0	133	30.2	30.2	30.2
1	220	50.0	50.0	80.2
2	69	15.7	15.7	95.9
3	11	2.5	2.5	98.4
4+	7	1.6	1.6	100.0
Total	440	100.0	100.0	

The breakdown of No of Housekeepers consisted of five groups that include none, 1 2, 3, and 4+.The percentage of No of house Keepers are 30.2%, 50.0%, 15.7%, 2.5%, and 1.6%.

*Table 8:*Marital Status

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Single	302	68.6	68.6	68.6
Married	135	30.7	30.7	99.3
Divorced	3	.7	.7	100.0
Total	440	100.0	100.0	

The information statistics of Martial status among the respondents of the questionnaire is divided in three groups that include Single, Married and divorced. The percentage of the marital status of participants was 68.6%, 30.7% and 7%.

*Table 9:*Awareness

Awareness	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	392	89.1	89.1	89.1
No	48	10.9	10.9	100.0
Total	440	100.0	100.0	

The descriptive facts of awareness on Clothing disposal behavior among young Consumer is divided in two different group that are yes and No, The percentage of awareness in clothing disposal behavior among young consumers was 89.1% and 10.9%.

Table 10: **Willingness**

Willingness	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	422	95.9	95.9	95.9
No	18	4.1	4.1	100.0
Total	440	100.0	100.0	

The breakdown statistics interpretation of the people willingness to donate clothes to charity among young consumers is divided in to two groups yes or no. The percentage of the young consumer willing to donate to charity is 95.9% and the people that don't donate their clothes to charity are 4.1%.

Reliability Analysis

The Cronbach coefficient is widely accepted to compute the reliability. The range of alpha values is from 0 to 1. Reliability considered in low level when Cronbach is <0.3 and it's not in accepted range. Reliability considers as high when cronbach value are greater > than 0.7 it indicated the high level of reliability and it can be highly accepted (Yang and Ou, 2008; Wong and Cheungu, 2005; Li and Wang, 2007). The values of ranging from 0.6 to 0.7 are also acceptable (Wong and Cheung, 2005; Meeampol and Ogunlana, 2006).

Table 11: **Reliability Statistics**

Construct	Cronbach's Alpha	No of Items
CCDB	0.962	12
DTC	0.939	11
GAFF	0.962	12
SM	0.932	11
SR	0.916	6

From the results reliability, the composite validity for young consumers clothing disposal behavior, (0.962) donation to charity (0.939), give away to friends and family (0.962), social motivation (0.932) and social responsibility (0.916) are above the benchmark of 0.7. Hence, it is concluded that due consistency is present between the measurement of our variables.

Correlation Analysis

Pearson correlation matrix is used to measure the strength and direction of the two variables. Coefficient values can range from -1for a perfect negative relationship to +1 for the perfect positive relationship. A value of (zero) 0 indicate no relationship between two variables (Firestone, 1987)

Table 12: **Correlations**

		GAFF	DTC	SM	SR	CCDB
GAFF	Pearson Correlation	1	.708**	.696**	.618**	.780**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	440	440	440	440	440
DTC	Pearson Correlation	.708**	1	.877**	.748**	.796**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	440	440	440	440	440
SM	Pearson Correlation	.696**	.877**	1	.802**	.801**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	440	440	440	440	440
SR	Pearson Correlation	.618**	.748**	.802**	1	.641**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	440	440	440	440	440
CCDB	Pearson Correlation	.780**	.796**	.801**	.641**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	440	440	440	440	440

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

Referring to the table 12 the correlation between (independent variables) giveaway to friends and family and donation to charity (independent variables) is 0.708 which shows the strongly positive relation. Giveaway to friends and family and social motivation (independent variables) 0.696 explain the positive medium strong relationship. Correlation between (independent variables), giveaway to friends and family and social responsibility is0.618, demonstrate the positive medium relationship. The association between the (independent variables) giveaway to friends and family and (dependent variable) young consumer clothing disposal behavior is 0.780. The association between (independent variables) Donations to charity to social motivation is 0.877which exhibits the strong positive relationship. The Relationship between donation to charity and social responsibility (independent variables) is 0.748, illustrates positive relationship. The correspondence between (independent variable) Donation to charity and (dependent variable) Young consumer clothing disposal behavior is 0.796 which shows positive relationship. The connection between (independents variable) social motivation and social responsibility is 0.802, which shows strong positive relationship. The

correlation between (independent variable) social motivation and (dependent variable) Young consumer disposal behavior is 0.801 which shows strongly positive relationship. Association between the (independent variable) social responsibility and (dependent variable). Young consumer disposal behavior is 0.641 which demonstrates the positive medium.

Regression Analysis

In the statistical modeling, the regression is measureable procedure for analyzing and evaluating connection among the dependent variable and the independent variables. In incorporate a variety of methods for displaying and dissecting a few variables, when the attention is on the relationship between the dependent variable with independent variables and the relation between one or more self-directing variables (Carig, 2008)

Table 13: **Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.869[a]	.755	.752	.44614

a. Predictors: (Constant), SR, GAFF, DTC, SM

b. Dependent Variable: CCDB

Table 14: **ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	266.429	4	66.607	334.639	.000[b]
Residual	86.583	435	.199		
Total	353.012	439			

a. Dependent Variable: CCDB

b. Predictors: (Constant), SR, GAFF, DTC, SM

In the above table Value of R simply shows deviations in our value of R is 0.869 which is 86% and it indicate high degree of association with our dependent factor due to our independent variables that are donation to charity, social responsibility , giveaway to friends and family and social responsibility. Similarly, R square indicates the extent to which our dependent variable can be explained by independent variables. The value of R square is 0.755 and it is around 75% and it means all of our independent variables that donation to charity, giveaway to friends and family members, social motivation and social responsibility have 75% impact on Young consumer disposal behavior and adjusted R square indicate how much our model is fit and the adjusted R square of our model is 0.752 which is fit and good indication.

This table likewise is demonstrating the value is .000 that is less than .05 which shows high significance and the both variables that are dependent variable and independent variable have high significance on each other

*Table 15:*Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.542	.156		-3.461	.001
GAFF	.381	.033	.427	11.492	.000
DTC	.255	.069	.198	3.715	.000
SM	.284	.075	.226	3.784	.000
SR	.175	.059	.129	2.975	.003
a. Dependent Variable: CCDB					

The above table shows that there is positive and highly significant relationship between our dependent variable attitudes towards young consumer clothing disposal behavior with our independent variables that are giveaway to friends and family donation to charity, social motivation and social responsibility. The beta of these variables are $\beta.427$, $\beta.198$, $\beta.226$, and $\beta.129$ and the value of significance are p=.000, p=.000, p=.000, and p=.003 therefore the hypothesis of H1, H2, H3 and H4 are accepted

Discussion and Conclusion

The chapter suggest for further studies related to young consumer clothing disposal behavior. The subject of clothing disposal behavior gained the attention in recent years. The study was conducted on the clothing disposal behavior of young consumer in Pakistan as there is no research done on clothing disposal behavior of young consumers. The main purpose of this research is to examine the present level of donation to charity, giveaway to friends and family, the social motivation and the social responsibility relationship with the attitude of young consumer clothing disposal behavior. The Young consumer were primarily chosen as the respondents for this study due to the fact that these young consumers are more fashion conscious and have led to dispose their outdated clothes. During the study or research it is clear that young consumers have knowledge and are aware of clothing disposal process and they are willing to donate their clothes to charity. Due to finding keen information regarding this topic all means were bushed to get in depth and comprehensive information from the literature available about the selected study. The research attempted in this particular area of interest was carefully studied from the part to collect and later select important and applicable factors. Based on study results; consumers are more likely to dispose of their clothes to donation to need people. This research also focuses on encouraging other people to support deserving people through clothing donation.

Limitations of Research

It is not possible to conduct a research without limitation present. One can strive to have the maximum output yielded for the efforts placed but in reality perfect situation doesn't exist. The limitations of the study are stated as follow. Time was the major constraint in this study. The time allocated to collect the data was short, because collected data needs to be screened, analyzed and then reported, all of which takes time. It was the intent of the research to collect more data and includes more respondents in the research

The respondent for this study were young consumers, who hesitated and show unwillingness to fill out the questionnaire. The data is only gathered through online questionnaire survey on Google form. The study has limitation as the participants of current study were only Young consumer between the age group of 18-34 therefore it can't generalized though whole Pakistan . Today clothing disposal practices are different   from those of over 30 years ago. The numbers of male and female participants were not equal or balanced because the majority of were female. The use of a convenience sample and online questionnaire taken from limited Young consumers could not represent all generations of Pakistan. So, this study could represent only 440 Young consumers clothing disposal behaviors

Future Implications and Suggestions

For any research it is of utmost importance that recommendations of any research are given on the scientific findings of the study. The implications can be examined to form an effective and efficient strategy that catalyzes the rate of clothing disposal in young consumers of Pakistan. The disposal of unwanted clothes can be disposed in an enhanced manner in addition to the efforts proceeded with the assistance of the government and the companies that are involved in social responsibilities, like Coca Cola's bottle for change claims to donate their bottles filled with coins till the top and endorsing influential celebrities to influence the public of Pakistan to join hands and involve them in the betterment of the community. This same strategy can be used for disposal of clothes to charities by endorsing celebrities to show how they help the community by disposing their own clothes and the feeling of peace they get from doing so. The public who fills coins in bottles can do that as clothes of change and highlight who gets them as a simple act of kindness.

There are the numbers of organizations involved in problems and crises reliefs in Pakistan who are working tireless for the betterment of the community by contacting these organizations are the surest way to give clothing and other donations to them. Their reliability can be portrayed and audits open for public for them to see their donations are given to the worthy and deserving. An individual can trace back where the disposed of clothes are given too and a family can be selected for this as per their own family sizes as every family has different ages and different clothes per age. A perfect fit family can be listed down and whichever matches in sizes they can be the sheer donors of the deserving family.

In case of monsoon floods, land sliding or any floods that are frequent in Pakistan International Airlines also known as PIA can be contacted to respond to the flood victims who are helpless and entirely dependent on charities.

Donation to SOS children's Village of Pakistan and other orphanages, Street Schools, Edhi foundation, Akhuwat clothes bank, Wall of kindness and old home centers in Pakistan giving them donation can socially motivate people to passionately go and do good things for the society. We can encourage the public to donate more through creating an online portal if they want to keep their kindness private and they can submit their cash for clothes through that portal with complete privacy of amount and name. To inspire people more through online blogging, social media pages and by stories making and videos on Facebook, twitter, and Instagram etc. can help increase awareness of the difference it makes by donating clothes in a deserving person's life.

We can run the promotional campaign through advertisements, Bill boards, and pamphlets in the educational Institutions that highlight the spirit of sharing, compassion to provide deprived people with clothing.

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Politics in the Government Organizations:
The Moderating Role of Optimism to Control Deleterious Effects

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Abstract

Organizational politics severely disrupt the productivity and performance of government organizations and their employees. The prime objective of this study is to appear the vulnerabilities of politics in the outcomes of government organizations in terms of declining of affective commitment and whistle blowing, instigating to turnover intentions and counterproductive behavior towards assigned work. The moderating effect of "optimism" between the perception and adverse effects of politics has also been appraised. Employees working at managerial and executive level in federal government organization of capital territory, are treated as population. Simple random sampling and simple linear regression statistical techniques are used for data collection and data analysis. Perceived politics lessen employee's commitment and increase counterproductive behavior as well as turnover intentions are the findings in response of 144 government employees. This is visible by this research that optimism as a psychological resource may counter the negative effects of organizational politics on various concerns and government employees are lessen involved in counterproductive activities and highly dedicated towards their job and organization.

Keywords: Government Employees, Perception of Politics, Affective Commitment, Turnover Intentions, Whistle Blowing, Counterproductive Behavior

Introduction

Employees working under government umbrella play pivotal role in managing the state affairs both at micro and macro level but politics within the organizations badly affect the organizational efficiency. Whereas the performance of public sector institutions is an indicator of compliance with government strategies and policies. Henceforth, it was a dire need of the time to explore the consequences of organizational politics among various occupational groups (Khuwaja, Ahmed, Abid, & Adeel, 2020). With the social, cultural, and technological advancement, government employees are now exposed to new challenges. The contemporary bureaucratic environment demands tacit and contextual knowledge of administrative assignments instead of solely relying at theoretical concepts inculcated through formal educational system. This shift demands more customized training opportunities and learning from the experiences of others (Dimeski, Memeti, & Bogdanoska Jovanovska, 2020). According to Lapuente and Suzuki (2020), government employees should be proficient in managing change and human resources, ethical practices, creativity and innovation as well as to craft clear vision. For strong leadership, they should have a clear understanding of the political environment. A thorough understanding of politics and relationship building help to execute administrative affairs effectively in the challenging environment. Politics in the organizational life is the common aspect hence government sector can't be exempted from its consequences in either way. Government sector is even perceived to be more vulnerable to political activities (Park & Lee, 2020).

Organizational politics is largely criticized due to negative attitudinal and behavioral outcomes associated with it. It drastically affects the performance and productivity of the organization (Hochwarter et al., 2020). Usually, venturesome, expeditious, and shrewd peoples exercise political tactics (Blickle et al., 2020) that may further lead to dampening organizational performance (Imran, Iqbal, Aslam, & Muqqadas, 2018). Organizational politics increases job frustration and stress among workers (Labrague et al., 2017). Employees may also have a cynic attitude in response to prevailing politics in the organization (Buenger, Forte, Boozer, & Maddox, 2007).

On the other hand, organizational politics is also taken positively by some experts. Buchanan and Badham (2020) characterize political behavior as necessary for change and organizational development. It may help to go beyond the established goals of the organization rather posing threat only (Maslyn, Farmer, & Bettenhausen, 2017). The adverse effects of politics can be controlled by encouraging trust and social support within the organizational climate (Vigoda-Gadot & Talmud, 2010). However, the opinion at large criticizes the prevalence of political tactics. Despite the fact that consequences of organizational politics are well documented, but various experts have contended organizational politics as contextual phenomenon and emphasized for contextual contribution to better understand the nature and outcomes of organizational politics (Drory & Vigoda-Gadot, 2010; Hofstede, 1993).

Hofstede, Hofstede, and Minkov (2005) state that theories and research findings should be treated cautiously. Research implications originating from one setting cannot be generalized to other by disregarding cultural dissimilarities (Hofstede & Bond, 1984; Hofstede et al., 2005). Therefore, this study is an attempt to know the consequences of organizational politics from a developing country to further refine the theory of organizational politics. *Hirschman's Exit, Voice, Loyalty and Neglect: Responses to Decline in Firms, Organizations and States.*

Literature Review

Hirschman's EVLN (exit, voice, loyalty and neglect) theory of organizational decline (1970) proposes that an individual can exhibit four possible reactions in response to aversive situation such as exit, voice, loyalty and neglect. Hirschman's EVLN theory has wide implications therefore grounded in different settings to know the outcomes of various deplorable situations like dissatisfaction with public services (Dowding & John, 2008), voters discomfort (Feld, 1997), antigovernment swings (Weber, 2011), failed service recovery (Casado-Diaz & Nicolau-Gonzalbez, 2009), shareholders dissatisfaction (Kostant, 1999), health services dissatisfaction (Dowding & John, 2011), etc. In organizational behavior, reactions to job insecurity (Sverke & Hellgren, 2001), psychological contract breach (Si, Wei, & Li, 2008; Turnley & Feldman, 1999), and organizational cynicism (Naus, Van Iterson, & Roe, 2007) have also been examined.

Our model of the study is also based on the tenet of Hirschman's EVLN theory. For example, turnover intentions as the exit, whistleblowing as voice, affective commitment as loyalty, and counterproductive behavior as neglect were selected to know the reactions of perception of politics. In organizational politics literature, Ferris, Harrell-Cook, and Dulebohn (2000) examined turnover intentions as exit and political behavior as voice previously. Later Vigoda (2000) examined intentions of exit and neglect in addition to other variables as reactions to perception of politics. All the responses of EVLN theory (Exit, Voice, Loyalty, and Neglect) as outcomes of perception of politics have also been examined in a comparative study by (Vigoda, 2001).

Perception of Politics and Organizational Commitment

Affective organizational commitment refers to emotional attachment, belongings, and deep involvement of an employee with the organization (Meyer & Allen, 1991, 1997)
The famous model of organizational commitment presented by Meyer and Allen (1991) divided organizational commitment into three discrete components as affective commitment, normative commitment, and continuance commitment. Continuance commitment implied the social and financial cost that an individual could bear as a result of quitting the job. Normative commitment explicated the moral obligation of an employee to stay because of the investment organization made in the personal development of an employee over some time (Meyer & Allen, 1991). Affective organizational commitment represents the loyalty of individuals with their respective organizations (Klehe, Zikic, Van Vianen, & De Pater, 2011). Considering the loyalty attribute, an affective commitment was selected as a consequence. Previous studies confirmed the strong inverse association between perception of politics and organizational commitment. For example, (Vigoda, 2000) found a negative association between organizational politics and organizational commitment. Later, Vigoda and Cohen (2002) investigated opposite relationship and found organizational commitment as a predictor of perception of politics. Miller, Rutherford, and Kolodinsky (2008) in a meta-analysis also revealed inverse association between perception of politics and organizational commitment at large. Considering the local environment, Bodla and Danish (2009) have also endorsed the negative association between these two constructs. Cropanzano, Howes, Grandey, and Toth (1997) provided more relevant finding as the author analyzed affective commitment in association with perception of politics and found significant inverse relationship. Based on these arguments, the following hypothesis was developed;

*H1:*Perception of politics will positively influence affective commitment.

Perception of Politics and Whistle Blowing

Whistle-blowing is defined as the disclosure by organization members (former or current) of illegal, immoral, or illegitimate practices under the control of their employers, to persons or organizations that may be able to affect their action (Near & Miceli, 1985). Whistleblowing helps to address injustice and illegitimacy by reporting to concerned authorities (Berry, 2004). Employees commonly blow a whistle in response to malpractices or inequity which they find hard to resolve through established channels (Fletcher, Sorrell, & Silva, 1998). Organizational politics is conceived to be a self-benefiting approach at the cost of the organizational interest (Ferris, Fedor, Chachere, & Pondy, 1989). Organizational politics is largely directed to gain power using immoral and unfair means (DuBrin, 1978). Do government employees blow the whistle in response to rising politics in the public sector? This study also attempts to answer this question.

Hirschman (1970) EVLN theory describes the relationship between undesirable situations and voice (whistleblowing) tendency. Previously, some attempts have been made to know the association between voice and different unsatisfactory situations like job dissatisfaction (Rusbult, Farrell, Rogers, & Mainous III, 1988), job insecurity (Sverke & Hellgren, 2001) and organizational cynicism (Naus et al., 2007). Some authors also examined voice or alternate voice as an outcome of organizational politics (Ferris et al., 1989; Ferris & Kacmar, 1992; Vigoda, 2001). According to Near and Miceli (1985), employees actively report hard issues and avoid reporting soft issues such as power and politics. Normally employees become a part of the political move due to flourishing politics (Bacharach & Lawler, 1980; Ferris et al., 2000). Nevertheless, whistleblowing is useful to report unfair, unethical, illegal, and unjust practices when no other options are available (Dozier & Miceli, 1985). Whistleblowing is like a protest against unsatisfactory conditions. But the legitimacy, as well as the tendency to blow a whistle, lies with whistleblower (Near & Miceli, 1985). These arguments provided the following hypothesis;

H2: Perception of politics will positively influence whistleblowing.

Perception of Politics and Counterproductive Behavior

Robinson and Bennett (1995) defined counterproductive behavior as voluntary behavior that violates significant organizational norms and in so doing threatens the well-being of an organization, its members, or both. Therefore any behavior can be counted as counterproductive if it distracts smooth organizational working and has adverse effects. Counterproductive behavior always has detrimental effects on organizational well-being (Fox, Spector, & Miles, 2001; Robinson & Bennett, 1995). Keeping in view the definition of counterproductive behavior, punctuality issues, theft, alcoholism, damaging physical assets and many more can be counted as counterproductive and deviant workplace behavior. Gruys (1999) specified 87 different counterproductive behaviors and categorizes them into 11 categories. Ferris et al. (1989) and Vigoda (2001) concluded a direct positive relationship between perceived politics and absenteeism. Vigoda-Gadot and Kapun (2005) and Vigoda (2000) found a significant positive association between perception of politics and negligent behavior. Perception of politics may also cause withdrawal or aggressive behavior in the organization (Ferris & Kacmar, 1992; Spector et al., 2006; Vigoda, 2000).

According to Rosen (2006), counterproductive activities are increased as a response to rising politics in the organization. This might be due to some operational similarities of the two constructs. (Mintzberg, 1983, p. 712712) defined political behavior as unsanctioned, illegitimate, and unacceptable behavior particularly directed to satisfy personal interests. On the other hand, counterproductive behaviors comprise various types of unproductive behavior (Robinson & Bennett, 1995). This characterized political behavior itself a counterproductive behavior. The perception of politics may therefore lead towards some other kinds of counterproductive behaviors. These helped to generate the following hypothesis;

H3::Perception of politics will positively influence counterproductive behavior.

Perception of Politics and Turnover Intentions

Turnover intentions imply an individual's quitting probability from a job after a specific period (Tett & Meyer, 1993). Turnover intentions emerge as a result of a distasteful response for an employer. Previous studies have confirmed a strong direct relationship between perceived politics and turnover intentions (Cropanzano et al., 1997; Ferris et al., 1993; Ferris et al., 1989; Hochwarter, Perrewé, Ferris, & Guercio, 1999; Kacmar, Bozeman, Carlson, & Anthony, 1999; Poon, 2003; Randal, Bormann, & Birjulin, 1999; Vigoda-Gadot & Kapun, 2005; Vigoda, 2001). According to Poon (2003), perceptions of organizational politics may have a direct and indirect relationship with turnover intentions. Job stress and job satisfaction may mediate the relationship between perceived politics and intent to quit (Hochwarter et al., 1999). The positive link between these two constructs was also highlighted in a meta-analysis by (Miller et al., 2008). Vigoda (2000) found a strong direct link between organizational politics and intentions of exit comparing other outcomes by studying public organizations. The direct association was also confirmed in the contextual environment by (Bodla & Danish, 2008). These helped to develop the following hypothesis;

*H4:*Perception of politics will positively influence counterproductive behavior.

Optimism

Optimism refers to the positive affective evaluation of a person about the future (Marko & Savickas, 1998). According to Scheier and Carver (1985), optimists commonly have positive expectancies for their future in contrast to pessimists (Scheier, Carver, & Bridges, 1994) and have better physiological adaptation (Lai et al., 2005; Segerstrom, Castaneda, & Spencer, 2003). Optimism helps to maintain goal-directed behavior among employees by conferring resilience under intimidating conditions (Scheier & Carver, 1985). It relates to greater psychological well-being (Carver, Scheier, & Segerstrom, 2010) which makes them persistent in adverse situations. They are less likely to experience negative emotions and remain hopeful for favorable outcomes (Carver & Scheier, 2014; Donnellan, Assad, Robins, & Conger, 2007; Grote, Bledsoe, Larkin, Lemay Jr, & Brown, 2007).

The moderating role of optimism is well documented in the existing literature (Black & Reynolds, 2013; Peterson, 2000). Various researches have proved the buffering impact of optimism on different stress-related outcomes (Britton, Sliter, & Jex, 2012; Grote et al., 2007; Scheier & Carver, 1985).

Recently, Abbas, Raja, Darr, and Bouckenooghe (2014) conducted a study to know the moderating role of psychological capital (PsyCap) on the perception of politics and various outcomes. Hope and efficacy were taken as the two dimensions of PsyCap. Except for the perception of politics to

turnover intentions relationship, PsyCap showed significant moderating effects on the assumed relationships. Considering empirical findings, the present study also tests the moderating role of optimism between the perception of politics and assumed outcomes.

*H5:*Optimism will moderate the relationship between perceived politics and its various consequences (affective commitment, turnover intentions, whistleblowing, and counterproductive behavior).
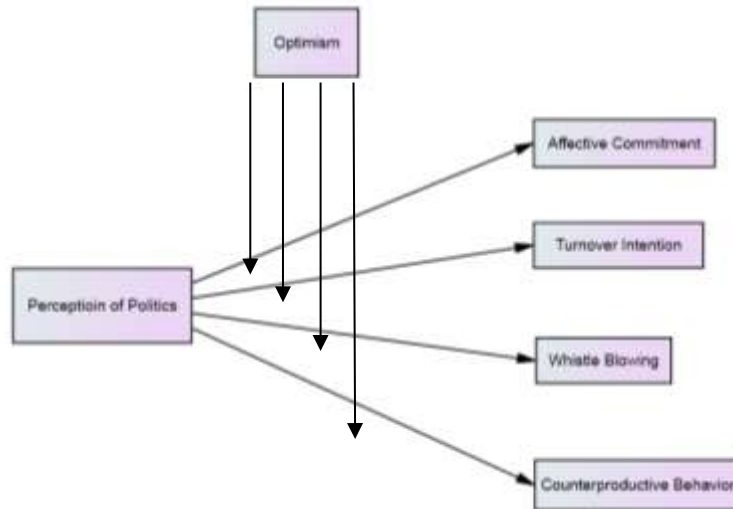
Research Model of the Study

Methodology

Subjects/Sample

This study strived to know the consequences of organizational politics among government sector employees working at the managerial or executive level. Researches showed that the public sector is comparatively more vulnerable to political tactics (Vigoda-Gadot & Kapun, 2005; Vigoda & Cohen, 2002). Moreover, the standard tools established to collect data about our various measures were comprehensive enough that a low level employee could find hard to comprehend the items taping different facets of organizational politics (Abbas et al., 2014). Therefore, employees working at managerial levels in different cities and government organizations were treated as the population of the study. However, the study was confined to capital territory and the government organizations under the control of the federal government were targeted for the purpose.

Procedures

A questionnaire as a tool for data collection was used to collect responses. Initially, 300 questionnaires were sent to executives working at various managerial levels through postage service and a self-administered approach. Most of the previous researches concentrated on a heterogeneous sample because perceived politics can be held by any employee irrespective of cadre and hierarchical level (Bodla & Danish, 2009; Vigoda-Gadot & Kapun, 2005; Vigoda-Gadot, 2007). Therefore, subjects were targeted randomly. The study was delimited to officers working in the executive cadre within the vicinity of the twin city of Pakistan. The response rate was quite low therefore some reminder letters were also sent. After consistent efforts, 144 usable questionnaires were received. The sample size was low but deemed appropriate to generalize and apply inferential statistics following the recommendations of Camrey and Lee (1992) and Sample size and subject to item ratio

in principal components analysis and Costello, Osborne, and evaluation (2005). The responses were analyzed using SPSS-25.0 and AMOS-23.

Due to the cross-sectional nature of the research design, the responses could have been tainted by common method variance, therefore, standard protocols were followed to examine method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Procedurally, the questionnaire contained a cover letter explaining the purpose, academic nature, and measures to uphold the anonymity of respondents. Participation in the survey was entirely at ones' own will and even they could leave the survey at any point of time if felt indecisive. Moreover, a complete profile of the research team was mentioned with contact details of the principal investigator to contact in case of ambiguity or concerns.

Statistically, Harman's single-factor test was conducted to diagnose common method variance (CMV) (Podsakoff et al., 2003; Williams, McGonagle, & Psychology, 2016). The total variance was calculated by taking all measures as a single factor without rotations. Variance extracted in this way was less than the cutoff value of 50%. Hence it was plausible to assume that the data was not affected by method biases.

Measurements

A questionnaire as a research instrument was used. All the items were adopted from previous studies. Items were based on a five-point Likert scale where 1 represented "strongly disagree" and 5 "strongly agree". Detail about the measurements is given in table-I.

Table 1
Scale Items and Sources

Variables	Sources	Originally Developed	Items	α
Perceptions of Politics	Kacmar and Carlson (1997)	Kacmar and Ferris (1991)	12	0.868
Turnover Intentions	Tepper et al. (2009)	Tepper et al. (2009)	3	0.857
Counterproductive Behaviors	Jung and Yoon (2012)	Fox et al. (2001)	5	0.789
Affective Commitment	Wasti (2002)	Meyer and Allen (1991)	5	0.779
Whistle Blowing	Park and Blenkinsopp (2009)	Park and Blenkinsopp (2009)	4	0.859
Optimism	Carver et al. (2010)	Carver et al. (2010)	6	0.812
Total Items			**35**	

Results

Demographical information showed that nearly 56% of respondents were aged between 31 to 40 years. Whereas 37% showed their age between 21 to 30. This shows that most of the mid-career employees took part in the survey. Considering the tenure of employment, 48% of employees had 6-10 years of working experience while 25% had 1-5 years of experience. These figures are quite aligned with the age reflected. Due to male dominancy in society, 76% of male employees participated.

Income level showed that 39% of employees were earning Rs.11,000/- to Rs.30,000/-. The government had provided a significant increase in the salary of public employees due to recent inflation. Therefore employees had competitive salary packages keeping in view the economic conditions of Pakistan.

Masters level is considered as the reasonable qualification in local environment therefore 61% employees revealed master level of education and 36% were just graduates. During the last few years, the government had confirmed the status of most of the employees as "permanent". Results showed that 84% of respondents were enjoying the permanent status.

Table 2
Demography of the Respondents

Measures	Items	f	%age	Measures	Items	f	%age
Age	20 or below	9	6.3	Experience	Less than 1 year	8	5.6
	21-25	23	16.0		1-5 yrs.	36	25.0
	26-30	14	9.7		6-10 yrs.	69	47.9
	31-35	37	25.7		10 or above	31	21.5
	36-40	44	30.6	Gender	Male	109	75.7
	41 or Above	17	11.8		Female	35	24.3
Income Level	Below 10,000	6	4.2	Education	Bachelors	52	36.1
	11,000-20,000	24	16.7		Masters	88	61.1
	21,000-30,000	32	22.2		MS/M.Phil	4	2.8
	31,000-40,000	12	8.3		PhD	0	0.0
	41,000-50,000	47	32.6	Employment Status	Contractual	23	16.0
	Above 50,000	23	16.0		Permanent	121	84.0

Reliability and Validity Analysis

The reliabilities of all constructs were examined using Cronach Alpha values, which were higher than the threshold of 0.7 (Nunnally, 1994). In addition, the composite reliabilities were also higher than the acceptable range.

To test construct validities, factor analysis was performed (see table-3&4). The values of KMO and Bartlett's Test of Sphericity (KMO= 0.851, p<0.001) suggested the sampling adequacy of data for Factor Analysis. Later, the standardized factor loadings of measurement model was examined. The values of average variance extracted (AVE) were above 0.5 indicated the construct had managed to capture more than 50% variance (Hair, Black, Babin, Anderson, & Tatham, 2006). It helped us to ensure the convergent validities. In addition, the maximum shared variance (MSV) with respect to each construct were lower than the corresponding AVE (Fornell & Larcker, 1981). Following the recommendations of Hair (2006), the inter construct correlations were also calculated which was lower than the square roots of AVE. Thus, the discriminant validity was also ensured. By determining the construct validities, we moved towards examining the hypothesis of the study.

Descriptive results (Table-5) show relatively high affective commitment hence low turnover intentions among employees of the government/public sector. Employees further have whistleblowing intentions in case of any wrongdoings going on.

Correlation analysis shows considerable high relationships among the explanatory and criterion variable except between perception of politics and whistleblowing table-5. Correlation coefficients are reported between perception of politics and affective commitment as r= -0.25 (p<0.001), perception of politics and turnover intentions as r=0.27 (p<0.001), perception of politics and whistleblowing as r=0.07 (p>0.05), perception of politics and counterproductive behavior as r=0.35 (p<0.001).

Regression Analysis

Regression results (Table-6) provide the detail about the predicting qualities of perception of politics towards various hypothesized reactions. Perception of politics explained 6% variations in affective commitment and 6% in turnover intentions whereas accounted for 13% variations in counterproductive behavior. Perception of politics couldn't explain any significant variation in whistleblowing. Coefficient values emerged as β= -0.38 (p<0.01) for affective commitment, β= 0.52 (p<0.01) for turnover intentions, β= 0.10 (p>0.05) for whistleblowing and β= 0.61 (p<0.001) for counterproductive behavior.

Table 6
Results for Regression Analyses

	Affective Commitment	Turnover Intentions	Whistle Blowing	Counterproductive Behavior
□	-0.38*	0.52**	0.10	0.61**
R²	0.06	0.07	0.005	0.13
Adj. R²	0.05	0.06	-0.002	0.12
F	9.11**	10.85**	0.68	20.24***
t	-3.01	3.29	0.82	4.49

* p < 0.05; ** p < 0.01; *** p < 0.001

Note: n = 144. Affective Commitment, Turnover Intentions, Whistle Blowing, and Counterproductive Behavior as criterion variables.

Moderating Influence of Optimism

Multiple regression analysis was used to test the moderating effects of optimism on various assumed relationships (Cohen, Cohen, West, & Aiken, 2013). In the first step, the independent variable was entered along with the moderator in the regression equation. In the second step, the interaction term of the independent and moderating variable was included in the regression equation. The significant result of the interaction term confirmed the moderation.

Results showed that by controlling the effects of POP and optimism, the product terms of POPxOpt was significant for affective commitment (β = 0.29, *p* < 0.05; □□R² = 0.31), whistle blowing (β = -0.15, □□*p* < 0.001; □R² = 0.06), and counterproductive behavior (β = -0.28, *p* < 0.05; □□R² = 0.01). However, insignificant result was obtained for turnover intentions (β = -0.30, *p* > 0.05; □□R² = 0.26).

Table 7
Results for Moderated Regression Analyses

	Affective Commitment		Turnover Intentions		Whistle Blowing		Counterproductive Behavior	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step-1								
Perception of Politics (POP)	-0.45**		0.56**		0.13		0.60**	
Optimism (Opt)	0.08		0.04		-0.03		0.01	
Step-2								
Perception of Politics (POP)	NA	0.31*	NA	0.005	NA	0.06**	NA	0.26*
Optimism (Opt)	NA		NA		NA		NA	
POPxOpt	0.29*		-0.15		0.38**		-0.30*	

Notes: *p<0.01; **p<0.05; ***p<0.001

The interactions of the moderator for high and low values are plotted and given in figure 1 through figure 4. Figure 1 shows the negative relationship between POP and affective commitment which is steeper when optimism is high. Figure 2. shows that the positive relationship between POP and turnover intentions is alleviated for highly optimistic individuals. Figure 3. reveals an inverse buffering effect of optimism between POP and whistleblowing. The relationship is negative at a low level of optimism. But high optimism changes the nature of the relationship into positive. This implies that optimistic employees blow the whistle expecting fruitful changes in the conditions. Figure 4. shows the positive relationship between POP and counterproductive behavior which is negative for high optimism.

Figure 1
Interactive Effects of Optimism and Perceived Organizational
Politics (POP) on Affective Commitment
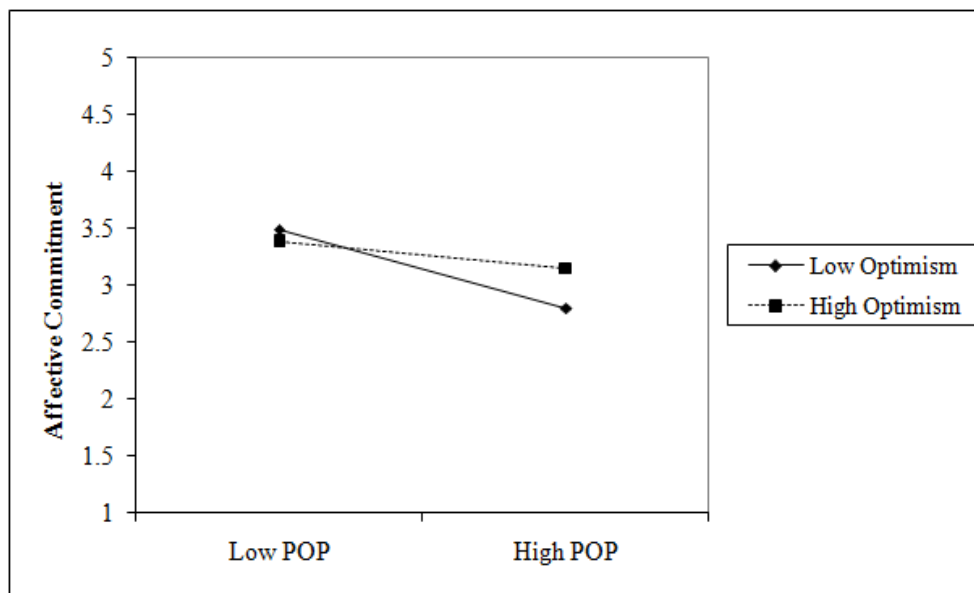
Figure 2
Interactive Effects of Optimism and Perceived Organizational
Politics (POP) on Turnover Intentions
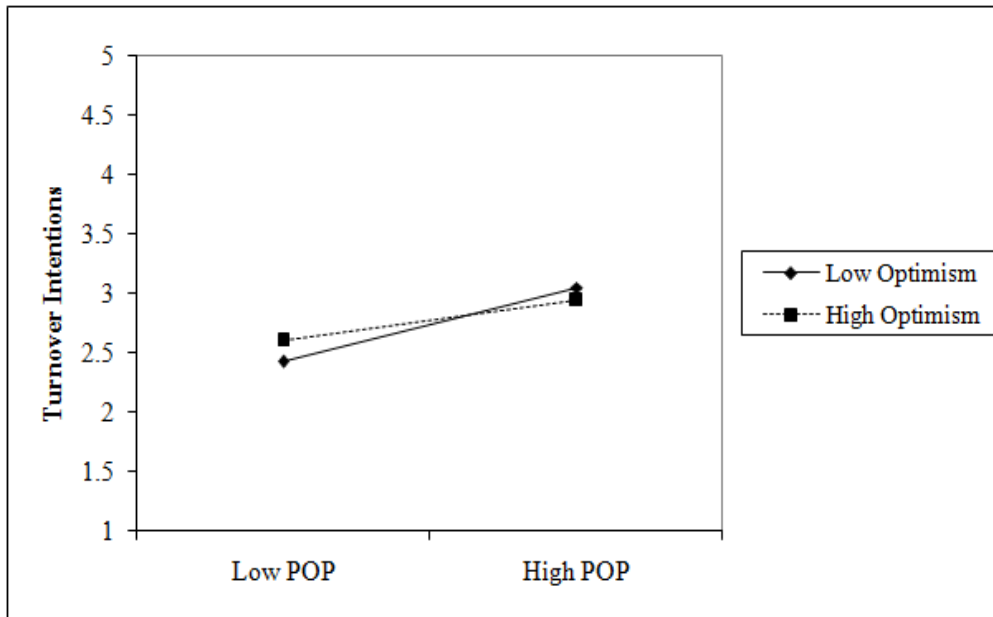
Figure 3

Interactive Effects of Optimism and Perceived Organizational
Politics (POP) on Whistle Blowing
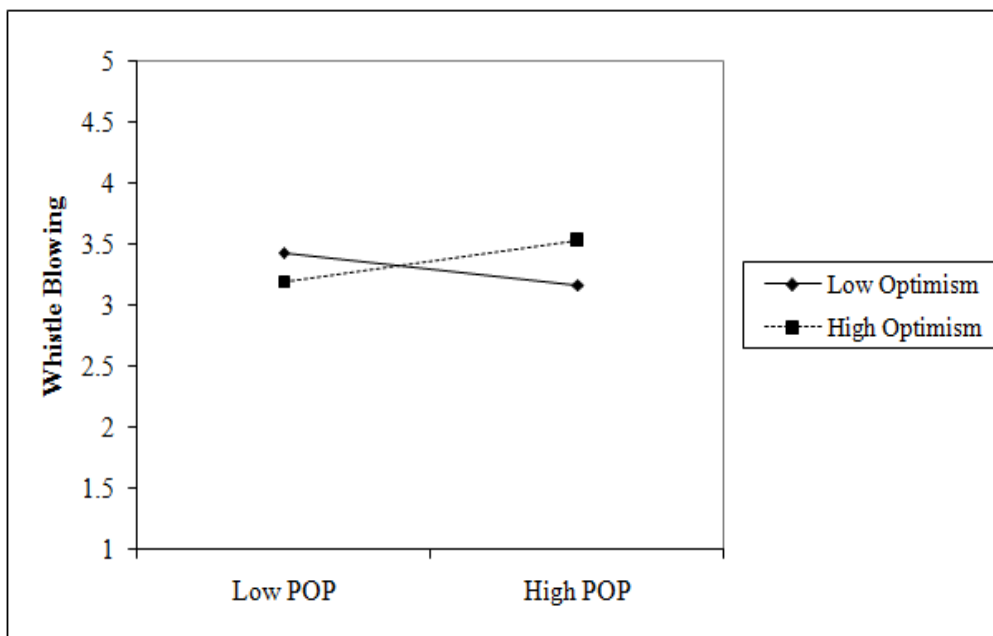
Figure 4
Interactive Effects of Optimism and Perceived Organizational
Politics (POP) on Counterproductive Behavior
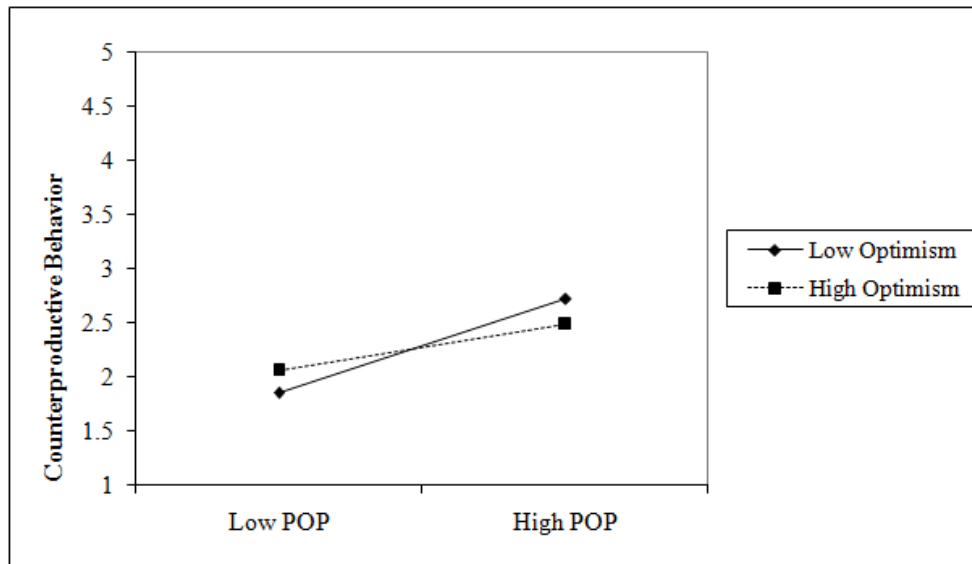
Discussion and Findings

The findings of the study unfolded some interesting facts about government employees working in different capacities. Largely, the study confirmed that predicting qualities of perception of politics towards affective commitment, turnover intentions, and counterproductive behavior. Nearly all relationships were in the hypothesized direction. Government employees were commonly viewed as more involved in workplace deviance comparing their private coequals. But our analysis provided encouraging findings. Generally, employees working at the managerial level and particularly in administrative capacities have to be very responsible. They are associated with key administrative responsibilities which hardly allow them to spare time for other activities. Therefore, they have to be punctual and spend stipulated time in the office. On the other hand, growing political activities may encourage antisocial behavior in the organization. When government employees perceive ripening politics in the organization then it may dampen their morale and pace of work.

Another encouraging feature is observed about government employees who are found less interested to leave the job. The government has provided significant pay raises to all the employees working in the public sector to meet the consistently rising inflation. The salaries of government officers are quite competitive in addition to other privileges like the number of leaves allowed, working hours, medical and transportation facilities, insurances, etc. Therefore, employees are found with minimum turnover intentions. However, political perception showed a direct and significant relationship with turnover intentions which implied that flourishing politics may give rise to turnover intentions.

About affective commitment, employees are found duly loyal with their respective organizations and wish to stay on long term basis. In addition to financial and non-financial rewards offered to public employees, government employees also enjoy the authority conferring additive satisfaction. Precisely, they have all the reasons to stay committed to their job and organization. But the fact

remains, perceived politics may negatively impact the commitments and employees may lose interest in their jobs. In sum, we got support for H1, H2, H3, and H4.

Employees also showed high whistleblowing intentions. But the fact remains, government sector of Pakistan lacks specific channels to report wrongdoings or illegal behaviors. The survey reveals the interesting fact (through an open-ended question) in the majority of government offices about anonymous reporting. Since employees do not find any appropriate way to report illegitimate practice, therefore, they usually go to send anonymous letters and emails to higher authorities or anyone in command. This strategy ensures confidentiality and protection against likely victimization. Surprisingly, organizational politics failed to show any influence towards whistleblowing. Though employees were of the view that they would surely report any unlawful activity or behavior to concerned authorities but reporting political activities specifically not appreciated by the respondents. Generally, employees are away from political manipulation and are less concerned about such kinds of behaviors. Secondly, employees at higher positions commonly report hard issues like embezzlement, kick-offs, theft, etc. Reporting general political tactics are not much severe to be voiced as conclude from our result.

In nutshell, this study confirmed the adverse effects of organizational politics on some key outcomes confirming the findings of previous studies (Gandz and Murray, 1980). To counter the detrimental effects, the moderating role of optimism was also investigated on various hypothesized relationships. Optimism buffers the negative impact of POP towards affective commitment, whistleblowing, and counterproductive behavior. This implied that the detrimental effects of POP can be countered by optimism. Optimistic employees working in government capacities may not have any negative attitudes and behavior. The findings reveal cautions for employees with low psychological resources, who may be more susceptible to negative outcomes. Whistleblowing which had a weak association with POP become a significant outcome in the presence of optimism. It implies that employees blow a whistle when they are optimistic about the impact of raising voice or when favorable changes are expected. However, the moderating role of optimism on the relationship between POP to turnover intentions couldn't be proved. Previously, Abbas et al. (2014) found a more strengthened relationship between POP–turnover intentions in the presence of psychological resources. In this case, though optimism changed the nature of the relationship between POP and turnover intentions the effect of interaction term was insignificant.

Implications and Future Directions

Theoretically our study validates the existing studies by highlighting the adverse nature of conflict that not only reduces employees' commitment but also motivates individuals towards counterproductive activities and even intends to leave the organization. Employees may also take passive position and blow whistle against illegitimate behaviors of few employees. In nutshell, our study complements the role of EVLN (exit, voice, loyalty and neglect) model (Hirschman, 1970). Employees may follow any of undesirable behavior as a response to politicized environment or even lessen their loyalties with organization. In addition, our study extends the existing literature by contributing the moderating role of optimism to buffer the adverse effects of perceived politics. Employees high on optimism face the challenging situation caused by organizational politics in pragmatic way.

For practicing managers, our study guides managers to be vigilant about the adversities caused by politics. Any illegitimate or unsanctioned behaviors of few employees may cause to politicize entire work environment which further lessen the loyalties of others and stimulate different types of

undesirable behaviors. In the same vein, managers may consider the role of optimism that has emerged as threat neutralizer.

For future researchers, the same model may be replicated in other settings to see the differences. Cross sectional data limits the generalizability of the findings, hence longitudinal research design may also be opted to see if the results show any time sensitivity. Moreover, we strongly encourage future researchers to examine other psychological reservoirs that may also help to face challenging situations. For example, self-esteem, GRIT (Gumption, Resilience, Integrity, Tenacity), mindfulness to name a few, may also be tested as optimizing factor.

Conclusion

The results of the study show that government employees working at different positions in government organizations are less involved in counterproductive activities. They are found highly committed to their organizations with minimum turnover intentions. Perceived politics showed direct and positive relationships with turnover intentions and counterproductive behavior. An affective commitment was also found to be significantly and negatively related to organizational politics. Perception of politics couldn't show any relationship with whistleblowing. Optimism emerged as a key moderator between POP to affective commitment, POP to whistleblowing and POP to counterproductive behavior.

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Appendices
Table 3
Pattern Matrix

	1	2	3	4	5	6
POP1	0.65					
POP2	0.77					
POP3	0.78					
POP4	0.65					
POP5	0.80					
POP6	0.94					
POP7	0.69					
POP8	0.75					
POP9	0.70					
POP10	0.51					
POP11	0.73					
POP12	0.73					
AC1			0.80			
AC2			0.85			
AC3			0.73			
AC4			0.71			
AC5			0.59			
TI1						0.70
TI2						0.91
TI3						0.92
WB1					0.78	
WB2					0.81	
WB3					0.80	
WB4					0.82	
CWB1				0.72		
CWB2				0.84		
CWB3				0.65		
CWB4				0.64		
CWB5				0.71		
OP1		0.74				
OP2		0.71				
OP3		0.69				
OP4		0.74				
OP5		0.84				
OP6		0.84				

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.

Table 4
Consturct Validities Analysis

	Variables	CR	AVE	MSV	MaxR(H)	1	2	3	4	5	6
1	TI	0.887	0.724	0.114	0.904	**0.851**					
2	POP	0.940	0.568	0.462	0.941	0.259	**0.754**				
3	OP	0.903	0.610	0.462	0.913	0.147	0.680	**0.781**			
4	WB	0.878	0.644	0.122	0.879	-0.064	0.086	0.027	**0.802**		
5	AC	0.864	0.559	0.122	0.868	-0.338	-0.266	-0.116	0.349	**0.748**	
6	CWB	0.843	0.522	0.166	0.862	0.102	0.408	0.258	0.036	-0.057	**0.722**

POP=Perception of Politics, AC=Affective Commitment, TI=Turnover Intentions, WB=Whistle Blowing; CWB=Counter
Productive Behavior, OPT=Optimism; Reliability estimates in parentheses.

Table-III Reliabilities and Validities of Constructs

Table 5
Means, Standard Deviations, Correlations, and Reliabilities

	Variables	Mean	Std. Deviation	1	2	3	4	5	6
1	POP	3.15	0.52	(0.94)					
2	AC	3.46	0.80	-0.25**	(0.86)				
3	TI	2.71	1.04	0.27**	-0.31	(0.88)			
4	WB	3.42	0.80	0.07	0.30**	-0.06	(0.88)		
5	CWB	2.20	0.91	0.35**	-0.03	0.09	0.06	(0.84)	
6	OPT	3.22	0.74	0.63**	-0.10	0.17*	0.03	0.22**	(0.91)

*p<0.05; **p<0.01; ***p<0.001

POP=Perception of Politics, AC=Affective Commitment, TI=Turnover Intentions, WB=Whistle Blowing;
CWB=Counter Productive Behavior, OPT=Optimism; Reliability estimates in parentheses.

Institutional Factors that Influence Social Upgrading in Global Value Chains in the Soccer Ball Industry

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Abstract

This research examines how institutional factors (public, private and social governance) Influence social upgrading in supplier firms in global value chains (GVCs) in the soccer ball industry of Pakistan. Using primary multi-source data, we found that institutional factors in GVCs play a critical role in the social upgrading of the industry. Furthermore, we revealed that social upgrading is an outcome of an interplay between public, private and social governance in GVCs.

Keywords: Social upgrading; social, private and public governance; institutions; global value chains (GVCs); soccer ball industry; Sialkot, Pakistan.

Introduction

Globalisation, information technology advances and liberal trade policies have given rise to a new era of international production and trade in the form of global value chains (GVCs). GVCs involve a multitude of firms, one of which serves as the lead firm or channel captain (buyers, in most cases) in coordinating the activities of a number of suppliers with each contributing to the value of the final product or service (Gereffi, 1994). Lead firms (brand manufacturers, retailers and brand marketers), which are primarily based in developed countries, retain the high value-added activities (e.g. research and development, marketing) in-house and outsource the low value-added activities (e.g. manufacturing or production operations) to firms in developing countries, resulting in integration among firms. GVCs explain how the lead firms, on the basis of power and authority, determine the value generation (addition) and value capture (profits) among all actors linked in value chains that are geographically dispersed (Gibbon, 2008).

A well-developed body of literature exists to explain the power asymmetry between lead firms and their suppliers and to identify the contributions that lead firms make to the economic upgrading of

supplier firms (see Bazan & Navas-Aleman, 2004; Cammett, 2006; Schmitz, 2004, 2006) and, to some extent, to the relationship of the economic (product, process and related factors) and social upgrading of suppliers (Bernhradt & Milberg, 2011; Bernhardt & Pollak, 2016; Khattak et al., 2017; Rossi, 2013). The definition of social upgrading in GVCs, which is based on the incremental nature of workers' rights (Barrientos, Gereffi & Rossi, 2011), is described as the process of improving the rights and entitlements of workers as social actors (Sen, 2000). The roots of social upgrading lie in the International Labour Organization's (ILO's) decent work framework, which is based on employment, rights at work, social protection and social dialogue and entails security, dignity, remuneration and social protection (Deranty & MacMillan, 2012).

While research on the contributions that lead firms make to the economic and social upgrading of supplier firms is readily available, less is known about how external conditions and pressures through a variety of institutional governance processes contribute to social upgrading (Khattak & Pinto, 2018). Specifically, there is a lack of research on how the institutional environment facilitates the process of social upgrading for workers in suppliers' countries. To address this gap in the literature, this study aims to answer the research question: how do the interactions of public, private and social governance (institutions) create conditions for the social upgrading of suppliers in GVCs? To answer this question, we conducted a case study of the sporting goods industry, in particular, the soccer ball industry, in Sialkot, Pakistan.

For the last 100 years, Sialkot, Pakistan, has been recognised as a centre of excellence for the production of sporting goods (Hussain-Khaliq, 2004) and is considered one of the sectors that has improved significantly in social compliance due to participation in GVCs (Lund-Thomsen et al., 2016). The sector employs approximately 200,000 people, earns foreign exchange of over US$1.6 billion annually (Pakistan-today, 2014) and contributes 6% to Pakistan's total exports (Awan et al., 2019). Due to vast experience, local workers have gained prominent skills for producing quality, hand-stitched soccer balls, helping the industry to maintain its position in international trade by meeting 70% of the global demand for hand-stitched soccer balls (Hussain-Khaliq, 2004). This led to the inclusion of the Sialkot sporting goods industry in GVCs, and over time Sialkot has become a permanent supplier of international sporting brands, such as Adidas, Puma, Nike, Diadora, Select, Lotto, Umbro, Mitre, Mikasa, Wilson and Decathlon (Lund-Thomsen et al., 2012). This paper begins with a review of the literature on social upgrading and institutions in GVCs, after which the study research method is described, followed by the findings, discussion and concluding remarks.

Literature Review

Social Upgrading and Institutions

When considering labour as a production factor, neoclassical economists argue that the labour market is a neutral arena where buyers and sellers interact for their economic interest and are free to develop relationships and exchanges through mutual understanding. The market is oriented towards the cost perspective, so suppliers try to maintain low marginal costs for production operations. This situation facilitates suppliers' efforts to manipulate labour costs by providing low wages, by requiring extra overtime without wages and by maintaining poor working conditions.

Political economists argue that markets are not neutral but are established within structures where exchanges are not made on equal terms but instead are based on power, asymmetric information and interaction nexuses between economic and social development. Therefore, in reality, labourers'

economic and social lives are not separate; rather, both spheres are interlinked and interdependent (Sen, 2000). On the other hand, GVC theorists argue that globalisation of production through GVCs has facilitated economic development that fosters employment growth in developing countries and provides opportunities for workers to participate in the world economy, participation that for these countries was previously limited to foreign investments (Bernhardt, 2013). However, empirical investigation has revealed that these developments come at the cost of vulnerability, exploitation and insecurity (Barrientos et al., 2016; Puppim de Oliveira & de Oliveira Cerqueira Fortes, 2014; Rossi, 2015); social downgrading has been observed in a few cases as well (Rossi, 2019). Moreover, child exploitation and an increase in sweat shops and unsuitable work conditions have been observed. Concerns about such issues are being raised by non-governmental organisations (NGOs) from time to time.

The institutional context varies from node to node of the GVC. For instance, buyers or lead firms are located in more advanced countries where institutional structures for social standards are effective, whereas supplier firms are located in developing countries where institutional enforcement is weak (Khattak, 2013). Institutional theories have gained popularity due to the powerful explanation they provide for different individual and organisational actions that take place at every level of society. Every society has established norms, practices and living habits of some sort that differentiate it from other societies; additionally, every society has economic, social and political roles that must be performed by economic agents, government, family, educators and religious actors, among others. They are all part of social systems that equally contribute to the better functioning of society. Most important are the economic and government systems. According to North (1990), institutions refer to the rules of the game in a society or are the humanly devised constraints that shape human interaction. These rules consist of both informal constraints and formal policies (North, 1990).

Formal institutions are centrally designed mainly by the state and are enforced through written rules, statutes, constitutions, civil codes and/or a society's legal system (e.g. constitutions, laws and property rights). The formal institutions comprise regulatory, political and economic institutions that define the parameters within which businesses operate. Governments endorse each type of formal institution and give them the authority to define rules, regulations, procedures and control systems by establishing effective monitoring (Covaleski & Dirsmith, 1988). The roles of formal institutions in governing market transactions are essential to facilitating the processes involved and reducing the costs of risks and uncertainty (Assaad, 1993). These roles have been documented in the literature of transaction cost economics based on new institutional economics (Brousseau & Glachant, 2008; Williamson, 1979).

Conversely, informal institutions evolve based on personal relationships, self-governance by economic agents learned over time and interactions that are deeply embedded in cultural factors, such as traditions, norms, values, taboos, customs and habits (Scott, 2013). These informal institutions are practised through channels that are not applied to the whole nation (Assaad, 1993).

Institutions in GVCs

Several forms of (vertical and horizontal) governance mechanisms that operate along GVCs can affect social upgrading. Primarily, the roots of GVC governance lie in vertical governance mechanisms (informal) based on the cross-national dimension of governance, where lead firms play the prominent role in establishing and regulating the GVC to respond to the needs of customers, associations and international humanitarian organisations (Gereffi & Lee, 2016). Recently, much attention has been paid to the role of the horizontal governance mechanism based on interactions between economic actors and local institutions (both formal and informal) that ensure better outcomes for all stakeholders (countries, firms and workers) (Islam et al., 2017; Khattak et al., 2017). Both types of governance (vertical and horizontal) and their interactions produce outcomes related to social upgrading (Islam et al., 2017).

The private governance in GVCs' vertical governance system is driven by the lead firms, such as global buyers that follow a code of conduct (addressing social and environmental working conditions and child labour issues, for example) to support their market reputation and sustainability initiatives (Locke et al., 2007; Lund-Thomsen & Lindgreen, 2013) and ensure that all actors in the chain, especially the suppliers (decentralised production system), adhere to those standards. Relationships between lead firms and suppliers exist on a continuum, ranging from a free market-based relationship on one end to hierarchies (buyers having their own suppliers) on the other end (Lund-Thomsen & Lindgreen, 2020). In between the two extremes are more balanced or equal relationships referred to as relational and modular networks (Gereffi et al., 2005). The weakest relationship is found in captive networks in which power asymmetry prevails, capabilities in the supplier's base are low and suppliers are dependent on buyers (Gereffi et al., 2005). The private governance in GVCs' horizontal governance system comprise of industrial associations and cooperatives. The role of industrial associations is becoming critical in GVCs, for example, the Joint Apparel Association Forum of Sri Lanka has taken the lead in branding the national apparel industry under its *Garments without Guilt initiative* as an ethnically based production industry.

The social governance in GVCs' vertical governance mechanism is driven by international NGOs that pressurize lead firms to incorporate social or environmental standards into their business practices and to ensure that the actors involved in the GVC adhere to those standards. Failure to adherence can result in various forms of activism, like boycotting the use of a product, protesting and organising petitions (Selwyn, 2013). The social governance in GVCs' horizontal governance mechanism is driven by local NGOs. Workers' associations raise concerns about local suppliers' adherence to appropriate standards and about the implementation of national rules and regulations. Hence, social governance often takes a multi-stakeholder form in which public, private and civil society actors pursue their common goals through joint action (Lund-Thomsen & Lindgreen, 2013; Nadvi et al., 2011). This form of joint governance, as noted previously, can be more effective than private, public or social governance alone in achieving sustainable improvements of working conditions in developing countries (Lund-Thomsen, 2019). Refer to Table 1 for a summary and details on public, private and social governance in GVCs.

Table 1: Types of governance in GVCs

Actor	Scope	
	Horizontal Governance	Vertical Governance
Public governance	Local, regional and national government regulations (e.g. labour laws and environmental legislation)	International organisations [e.g. ILO and World Trade Organization (WTO)]and international trade agreements [e.g. North American Free Trade Agreement (NAFTA) and generalized system of preferences (GSP)]
Private governance	Collective efficiency (e.g. industrial associations, cooperatives)	GVC lead firm governance (e.g. global buyers' voluntary codes of conduct)
Social governance	Local civil society pressure (e.g. workers; labour unions; NGOs for civil, workers' and environmental rights; gender equity advocates)	Global civil society pressure on lead firms and major suppliers (e.g. Fair Labour Association) and multi-stakeholder initiatives (e.g. Ethical Trading Initiative)

Source: Adapted from Gereffi and Lee, 2016

The public governance mechanism in GVCs' vertical governance is exercised by international public actors that include the ILO, World Trade Organization (WTO) or bilateral trade negotiations and resultant facilities, such as the Generalised System of Preferences (GSP) between countries, through which social clauses are integrated into trade agreements with an aim to apply core labour standards to international trade. They effect changes in national labour rules and regulations that can have a significant impact on smaller firms and their workers in developing countries (Coslovsky, 2014). The public governance mechanism in GVCs' horizontal governance, which is a more powerful tool due to the legitimate power of governments at various levels within nation-states, involves formal rules and regulations set by governments at local, regional and national levels (Nathan et al., 2016). However, these public governance mechanisms can hinder social upgrading because national rules and regulations are plagued by ineffective enforcement in many developing countries (Coslovsky, 2014). Nevertheless, GVCs are embedded in different institutional environments, and different nodes of the GVC interact with diverse institutional environments, making it imperative to understand how and what type of institutions interact with the GVC and affect firms' outcomes.

Research Method

Data and Sample

We used a qualitative case study approach in this research where soccer ball manufacturing firms, operating within the context of Sialkot city in Punjab-Pakistan, comprise the main unit of analysis. For selection of firms, purposive sampling was used (Onwuegbuzie & Nancy, 2007) because in purposive sampling we find the relevant informants who can best guide us on the subject (Merriam & Tisdell, 2015).

Since qualitative researchers emphasize on the procedure of case selection, representativeness, appropriateness, and the number of cases (Basias & Pollalis 2018; Doz, 2011; Ghauri, 2004; Krippendorff 2018; Seale 1999). Therefore, the criteria for selection of cases and sample size as suggested by Boddy (2016), Creswell and Tashakkori (2007), and Hagaman and Wutich (2017) were used because they provide criteria for the sampling of firms clustered within the same geographical boundary. Since all soccer ball manufacturing firms were clustered within the same geographical boundary and operated in the same institutional context at all levels (public, private, and social), hence, as suggested by them, 10 multiple cases are sufficient. They further suggest that the number of interviews for every single case should be between 3 to 5 and in case of multiple cases, 15 to 30 interviews are sufficient for a research project. In order to obtain multiple actors' point of view, multiple sources of data and cases were used. Twenty-one semi-structured interviews were conducted with 11 firms' representatives (Human Resources HR, Product, General etc).

At first, a list of firms (sporting goods industry) registered with the Sialkot Chamber of Commerce and Industry (SCCI) was obtained from the office of SCCI-Sialkot, an apex industry association in the Sialkot sporting goods industry (Khattak & Stringer, 2017). The Microsoft (MS) Excel list contained 1,000 registered firms and included their names, addresses, phone numbers, email addresses, website addresses and core products, such as soccer balls, sportswear, leather or gloves, to name a few examples. At the second stage in the process, as our case study focused on soccer ball manufacturing firms, we applied the MS Excel filter option in the core product category to narrow our list to include only firms that manufactured soccer balls. After filtering, 243 firms were identified. For further classification during the next step to trace only soccer ball manufacturers, we identified addresses (that could be traced on Google maps) and their website addresses. Out of the revised list of 243 firms, only 80 that were identified as producing only soccer balls had traceable physical and website addresses. These 80 firms were shortlisted for the interviews. Each of the 80 firms was visited, and permission to meet with their Human Resource (HR) managers, the primary gatekeepers who allow access to factories, was requested.

A total of 11 firms out of the 80 firms on the shortlist participated in the research, which reflects a 13% response rate. This response rate is acceptable in any typical qualitative research; indeed, Ritchie et al. (2013) argued that large and diverse populations are not the concern of qualitative research. Therefore, there was no need to ensure that the sample was of a sufficient scale to provide estimates or to determine statistically significant discriminatory variables. Refer to Table 2 for details on the firms interviewed.

Also, focus group discussions (FGDs) were conducted with skilled, semi-skilled and unskilled workers. Carrying out focus group discussions during participants' work hours presented a challenge. The most suitable times identified for the FGDs were during the workers' break time and after their

work hours. Thus, two FGDs were conducted during their break, and the six FGDs were carried out after work hours outside the factory at nearby small restaurants. In total, 64 participants took part in 8 FGDs, which is an appropriate number of participants based on earlier studies conducted (see Rossi, 2013). In addition, a survey was administered to collect information from workers for quantification purposes. A total of 250 workers, were asked to complete the questionnaire concerning wage issues, working condition indicators and enabling rights. As no questionnaire was available on GVCs to measure social upgrading dimensions (Islam & Polansky, 2018; Khattak et al., 2017), we developed survey items based on the content of the semi-structured interviews with the HR managers and issues raised by the workers during the FGDs.

Table 2: Classification of firms interviewed.

Factory Code (F=Factory, G=Government)	Classification (sector-wise)	Total workforce	Scale	Social Compliance
F1	Soccer (Thermo-Modelling)[1]	2,100	Large	SA8000[2], WRAP[3]+ CLEP[4]
F2	Soccer (Machine-Stitch)	1,000	Large	SA8000 + CLEP
F3	Soccer (Hand/Machine)	700	Large	SA8000, WRAP + CLEP
F4	Soccer (Hand/Machine Stitch)	1,400	Large	CLEP
F5	Soccer	1,000	Large	CLEP
F6	(Hand/Machine Stitch)	200	Medium	SA8000
F7	Soccer (Hand Stitch)	80	Medium	CLEP
F8	Soccer (Hand Stitch)	25	Small	None
F9	Soccer (Hand Stitch)	45	Small	None
F10	Soccer (Hand Stitch)	43	Small	None
G[5]11	Soccer (Thermo-OMB[6])	26	Small	Nil

[1] The thermal modeling method is a technologically sophisticated technique to produce a soccer ball that is different from machine-stitch and hand-stitch soccer ball production. It is used to produce the Official Match Ball (OMB), declared by the Federation International de Football Association (FIFA) as the official ball for use in international matches. The retail price of the OMB ranges from approximately \$80 to \$150, as compared to the traditional soccer ball, which costs approximately \$15 to \$45 (Soccerpro, 2015). Moreover, the OMB was used in the FIFA 2014 Football World Cup with the name 'Brazuca' and is identical to that used in the Union of European Football Association (UEFA) champion leagues with the name 'Tango 12' and in the FIFA Confederations Cup 2013 with the name 'Cafusa' (Kotschick, 2006; Sofotasiou, Hughes, & Calautit, 2015).

[1] SA8000 is an auditable certification standard that encourages organisations to develop, maintain and apply socially acceptable practices in the workplace.

[1] World Responsible Accredited Production

[1] Child Labour Elimination Program

The objective of this structured survey was to collect the workers' views structurally and reduce interview time; establishing reliability and validity, while relevant, was of least concern due to the use of the dichotomous scale (Yes and No), which generates only response percentages. This method is widely used to carry out surveys, particularly by NGOs in developing countries where data collectors take the views of respondents on structured items. Furthermore, six interviews were conducted with the government officials (Labour Department) and one interview with the representative of Director of Independent Monitoring Association for Child Labor (IMAC). List of interview questions for the firms have been given in Appendix A, focus group discussion sheet in Appendix B, and interview list for the government officials and NGO representatives in Appendix C respectively.

Data were analysed using a thematic analysis. In the first stage of the analysis, data were sorted according to concepts and themes (coding), which helps to break down, conceptualise, categorise and present data in an understandable manner (Ghauri, 2004). At this stage, data were scrutinised and organised by identifying repeated keywords, important sentences and expressions in transcriptions by adopting a line-by-line coding approach (Gibbs, 2007). At the second stage, the cases were categorised according to common features and codes (clustering) (Bryman & Bell, 2015). This helped to determine the governance structures in different cases and explore similarities and differences across multiple cases with reference to social upgrading. In the third stage, the different matrices of social upgrading elements were classified (matrices) (Gliner et al., 2011). Finally, the matrices developed were compared to develop a robust model and network of different public, private and social governance actors, along with themes.

Findings

Private Governance and Social Upgrading

<u>*Lead firms and social upgrading*</u>

The findings suggest that the soccer ball industry is driven by international buyers (buyer-driven chain), where lead firms, mainly buyers, define the parameters of a product, such as its design and specifications. Common types of networks found in the soccer ball industry were captive, relational

and market. To measure wage appropriateness, the minimum wages of all the workforces were used as criteria. According to the ILO (2019), minimum wage is defined as follows:

> [The] minimum sum payable to a worker for work performed or services rendered, within a given period, whether calculated on the basis of time or output, which may not be reduced either by individual or collective agreement, which is guaranteed by law and which may be fixed in such a way as to cater to the minimum needs of the worker and his/her family, in the light of national economic and social conditions.

Measurable standards of social upgrading have two components: 1) physical well-being and 2) employment and income security. Physical well-being includes ventilation systems, emergency exit clarifications, reduction in number of accidents, reduction in overtime and other related items. The category of employment and income security includes written contracts, reduction of casual workforce and registration with social security institutions.

Intangible elements of social upgrading consist of enabling rights, which encompass dignity and empowerment; improved social climate, for example, improved communication between management and workers; no harsh treatment; no discrimination; and freedom of association.

Firms' perspectives: From the managers' perspectives, the findings suggest that that they implement social upgrading dimensions for economic purposes. Primarily, supplier firms in the captive and relational networks were in contractual relationships with international buyers in which the supplier firms were required to implement codes of conduct, and that implementation was monitored and evaluated through third-party audits and by the representatives of social certification organisations, for example, WRAP and SA8000. In the case of non-implementation, the contracts were liable to be terminated, which would result in huge losses. Nowadays, it is indispensable for firms to be socially responsible; otherwise, the survival of the business is at stake. When managers were asked to identify their priorities for what to change to achieve social compliance, the firms operating in captive and relational networks replied that health and safety issues were among their major priorities due to the higher weightage assigned to such issues during third-party evaluations and buyers' audits by social compliance representatives. As mentioned by one of the firm's representative:

> *The reality is that we do 90% due to the pressure of international buyers; they force us to do what is necessary for business. Recently, Adidas conducted its separate audit, which was successfully completed, and we had a surprise visit by two other buyers as well.*

Firms were asked, aside from good working conditions, what specific benefits they provide to workers, such as wage rates, written contracts and leave time, for example. Firms operating in the captive and relational networks reported providing employees with written contracts and maintaining a separate file for each worker. The workers received a 6% employment old age benefit institute (EOBI) contribution, towards which the employer paid 5% and 1% was deducted from the employees' salaries. Further, firms provided a 6% contribution for each employee to a social security institution, such as hospitals and schools at which workers were entitled to receive free medical assistance and education respectively. All firms were consistent in providing leave time: specifically, 6 casual leave days, 8 sick leave days and 14 annual leave days were provided; female employees were entitled to an additional 90 days' maternity leave paid by the social security institution.

In all interviewed firms, wage increases were granted based on performance and as per wages set by the Government of Punjab. The stringent path firms were required to follow was to provide the

minimum wage as set by the Government of Punjab; therefore, the role of buyers was minimal in wage setting. Moreover, firms were asked under what conditions they considered labourers as permanent versus contractual employees, to which one of the HR manager replied:

> *If a person comes in for an office job, we offer him a permanent position. When labour workers come in to work on the floor or on production activities, we offer them a contract.*

Another HR manager replied as follows:

> *Those who work in the office we consider permanent, while those who work on production floors, who work on piece rate, are also permanent, but their wage structure is different.*

When asked about the salary structure difference for permanent and contract employees, one of the HR managers noted the following:

> *The minimum salaries are set by the Government of Punjab notification and skill wise, so workers are paid minimum wages and are also paid based on their skill base.*

Another HR manager stated:

> *We classify our workers as unskilled, semi-skilled and highly skilled as described by the Government of Punjab in the wage board notification.*

To measure employment and income security, managers were asked if they provided written contracts. A representative of a firm (HR manager) operating in a captive network said:

> *Yes, we give written contracts because international buyers mention the contracts in their code of conduct guidelines, and also the contracts are checked during third-party audit visits.*

Moreover, when the HR managers were asked about the duration of contracts, one provided the following explanation:

> *Actually, there is no mention of time in the contract. We issue an appointment letter in which a*
>
> *three-month probation period is cited, and then after the successful completion of the*
>
> *probation period, the worker becomes a regular employee.*

Similar practices were reported across the captive and relational networks. This condition is beneficial for firms which want the freedom to lay off labourers at any time. However, in the context of Sialkot, where a shortage of skilled labourers exists and labourers are able to find employment easily, the labourers are generally not concerned with the nature of the contract, according to feedback received during various interviews. Hence, the duration of contracts in the Sialkot context was not of significant importance.

Another aspect that received low priority was enabling rights, which gives workers the right to organise a union to protect themselves from exploitation. When firms were asked if they had a labour union, the firms operating in captive and relational networks reported that they had no voting system for the establishment of a trade union, but they indicated that a committee comprising labour representatives and management meet monthly to settle disputes. No evidence of strikes or lockouts in the firms was found. Despite the absence of trade unions, management worked well with labour, and labourers were allowed to visit their department head or human resource manager to settle disputes.

The findings revealed that third-party labour contractors acted as a channel for recruiting and managing employee relations and benefits in hand-stitched soccer, machine stitched soccer and sportswear stitching small and medium-sized enterprises. Labour contractors were found to have a direct relationship with firms, where the firms gave orders and timelines for completion to contractors. Then the contractor was responsible for arranging labour, settling their payment issues and managing their work. In this way, workers and employers were linked through contractors, who were compensated with a certain percentage (commission). This third-party labour contract arrangement was found to be feasible for firms because it helped to manage seasonal demand, to match the right type of workers with tasks, to ensure labour supply on a just-in-time basis and to reduce the costs and need for management of labour (Rogaly, 2008). However, it significantly affected the social upgrading of GVC firms by compromising decent working conditions. For example, the minimum wage rules and other labour benefits are negotiated such as leave social security and EOBI contribution.

Employees' perspectives: During FGDs, the workers identified wages as the most important element that should be improved upon. Most workers mentioned that they ask for minimum wages as set by the government. During interviews, most of the firms reported following the classification set by the Government of Punjab Wage Board. Therefore, the labourers' bargaining power to negotiate wages was low.

The employees considered wages as highly relevant in GVCs because they constitute the core contribution to their welfare, as a cash benefit pre-requisite to managing daily life activities. Employees reported that in small firms, the minimum wage was not observed because the workers were controlled by the third-party labour contractors, even though the workers were performing their work duties on the factory premises. One non-skilled worker said:

> *We are paid by the contractors, and it is not sufficient for our family. However, we cannot ask for more because other labourers are easily available.*

This issue applies only to non-skilled workers, as skilled workers are in short supply and jobs for skilled workers are plentiful, as noted previously According to the data obtained through the questionnaire, in small firms 54% of workers were paid salaries ranging between Rs.[7] 8,000–12,000 per month, which is below the minimum wage set by the Government of Punjab. Even in large firms, 21% workers (unskilled) were earning wages between Rs. 8,000–12,000 that did not meet the criteria established by the government. According to the data obtained through the questionnaire, in large firms, 21% of employees (unskilled workers) were not receiving the salary slip (a formal document

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[7] Pakistani currency, which, when converted into USD, equals $51.36–$77.05.

showing salary month and heads), and in small firms, 80% were not receiving it because most were
hired through third-party contractors who managed their salaries.

Results on the social security card issue were mixed. Those employees who were highly skilled and
working in an organisation for more than 10 years had a social security card. However, workers who
were semi-skilled, inexperienced and/or unskilled did not have a social security card and never
visited social security hospitals. The prime reason behind not visiting was that they did not find
medicine or doctors when they required. Therefore, the workers were least concerned about the
social security contribution. One factor they emphasised was the behaviour of their firms' owners
and management staff. The ease of receiving loan for the medical and other purposes was one of the
main factor. One worker from a small firm said:

> *Whenever we need any financial help, we ask our managers, and they always care. Our
> management takes care of our issues and helps us from time to time. Moreover, they also
> provide us with a loan if we need it.*

Another worker mentioned:

> *Whenever we need help, our firm provides us with a loan, and then payments are deducted
> from our salary, but we do not visit the social security hospital.*

Primarily, it is the responsibility of firms to pay the social security contribution of their workers to a
government social security institution, and workers receive their social security cards. However, it is
evident from the data collected from workers this was not always the case: even in large firms, 75%
of workers did not have a social security card, while in small firms 100% of workers did not have a
social security card.

Workers in captive and relational networks also shared their thoughts on other benefits and facilities
in addition to wages:

> *We have a canteen facility where lunch is provided free of cost, and the company provides us
> with transportation because workers are coming from the multiple towns and villages.*

The workers of firms in the market structure had this to say:

> *We bring our lunch from home or sometimes we go to the nearest hotel during break time….
> Whenever we ask for leave, the officer deducts the time from our salary.*

The workers were asked whether the working conditions, like the ventilation system, water plant,
protective gloves and other related factors, were good. One worker of a captive network said:
> *Our supervisor always walks on the production floor and tells the workers to follow the
> instructions, and whenever any worker is not following instructions, the supervisor guides us
> respectfully like we are his own kids.*

A worker of a small stitching centre said:

> *Our need to sit [sitting arrangements] is not good. Because of it, I feel pain in my back, and most of them [my co-workers] have back problems, also.*

When the workers were asked about their working conditions, 42% from medium-sized enterprises and 46% from small enterprises expressed that they did not have good working conditions. The next priority for worker after the wages was physical well-being. In a few FGDs, the workers of captive and relational networks praised improvements made in working conditions, including health and safety systems and the cleanliness of production floors, and also noted that no overtime was witnessed. The groups were then asked why such improvements were made. One worker attributed the changes to visits from third parties' auditors:

> *They come on a routine basis and talk to us. Now our owner has improved the condition of the production floor.*

When asked about formal voting system on the formation of a collective bargaining agent, surprisingly, 78% of workers from large firms replied 'No'. When HR managers were interviewed, they noted that they established an employee–management committee to resolve workers' issues. However, the mechanism for establishing a collective bargaining agent as described in labour laws had not been implemented. When factory employees were asked during FGDs about union participation activities, one said:

> *We have been working for a long time in this factory, and we never participated in union activities, but there is one committee that we can approach for HR related issues when needed.*

Another employee mentioned:

> *We are uneducated and do not know about this because our matters are resolved through committees, so we do not have any interest in a trade union.*

These statements indicate that labourers lacked awareness and interest in trade union activities because their matters were resolved through committees and they were satisfied with that option.

Most of the firms included in the sample employed few female workers. In the culture of Sialkot, females are less inclined to work in factory jobs. Most of the females we encountered were working in soccer stitching centres that were near their homes and they could easily manage their work. A few females were found in the sportswear industry working in ironing and packaging departments, which is considered unskilled labour. They were also managed by contractors. Due to this, the female perspective, which is an important aspect of GVCs, has not been incorporated into this study. Table 3 depicts the types of social upgrading under different private governance (vertical) mechanisms, along with various dimensions of social upgrading achieved in those firms.

Table 3: Relationship between private governance and social upgrading.

Factory	Governance structure	Social Upgrading							
		Measurable Standards					Enabling Rights		
		Wages	Physical well being		Employment and income security		Dignity and empowerment		
			Working environment	Overtime	Contracts	Social security	Social climate	No harsh treatment	No discrimination
F1	Captive	Yes	Yes	No	Yes	No	Yes	Yes	Yes
F2	Captive	Yes	Yes	No	Yes	No	Yes	Yes	Yes
F3	Relational	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
F4	Market	Yes	Yes	Nil	Yes	No	Yes	Yes	Yes
F5	Market	Yes	No	No	No	No	Yes	Yes	Yes
F6	Relational	Yes	Yes	Nil	Yes	No	Yes	Yes	Yes
F7	Market	No	Yes	No	No	No	Yes	Yes	Yes
F8	Market	No	No	Nil	No	No	Yes	No	No
F9	Market	Yes	Yes	Nil	No	No	Yes	Yes	Yes
F10	Market	No	Yes	Nil	No	No	Yes	Yes	Yes
G11	Market	No	Yes	Nil	Yes	No	Yes	Yes	Yes

*Yes = Following basic rules

*No = Not following

*Nil = Not applicable

Industry Associations and Social Upgrading

The SCCI played a key role in the development and implementation of the multi-stakeholder initiative to combat child labour in the soccer ball cluster. This agreement, known as the Atlanta Agreement, was formed between the ILO, the SCCI and the United Nations Children's Fund (UNICEF) on February 14, 1997. In Sialkot, the SCCI and Employers' Federation, along with ILO and UNICEF, played an important role in eradicating child labour activities from firms and stitching centres through the Atlanta Agreement, leading to social upgrading and providing access to key markets.

Public Governance and Social Upgrading

Local/domestic institutions and regulations

The Labour Department of Punjab is a state institution responsible for ensuring safe and healthy working environments, designing wages and monitoring several welfare schemes. Due to the absence of government-level inspections, employers (firm owners) were able to exploit labourers by paying low wages, providing poor working environments and indulging in child labour activities. To understand the labour regulation enforcement mechanism and its effectiveness, different stakeholders were interviewed, including the Punjab Director of Labour and Welfare, firm representatives, and workers. According to the Director of Labour and Welfare:

> *There are a total of 17,000 registered factories in Punjab, and to inspect these factories there are 72 labour officers. Particularly in Sialkot, around 1,000 factories are registered, and for inspection, there are two labour officers. According to these numbers, on average one labour officer has to visit 500 factories in a year. Though there is less variation in the physical structure of firms, machinery and equipment, labour issues related to minimum wage, social contribution, overtime, enabling rights and workers' livelihoods are volatile, and therefore, it is nearly impossible to ensure strict monitoring through a labour officer due to the shortage of labour officers.*

He was then asked what mechanism was in place to ensure efficient monitoring visits were conducted by labour officers, to which he replied:

> *We have incorporated technology, such as android tablets with 3G, which means monitoring through android to ensure that a particular person is visiting a firm along with sharing photos in real time. The biggest challenge is labour officer training, signal availability and recording mechanisms at head offices. Moreover, we have a toll-free number that workers can call to register their complaints.*

However, during fieldwork, workers categorically made comments similar to the following:
> *We do not know any toll-free number, and no information is placed on factory gates or inside the factory premises, and we do not even know who our labour officer is.*

Similarly, another worker representing labour replied:

> *Labour officers are corrupt. They do not visit the factories, and when once in a year they do visit the factory, they take a bribe and do not mention problems and issues in their report.*

When a labour officer was interviewed, he observed the following:

> *The factories owners are so powerful that the labour officer is not in a position to make a charge. We are not protected because in the market there are practices of being threatened by different independent groups who state that if we highlight information, we will not be spared. We do not have resources for transportation and lack a real-time communication infrastructure with the director's office.*

The results indicate that in Sialkot, the enforcement of formal public institutions regulations is weak and nearly non-existent.

International institutions and regulations

Pakistan obtained the GSP Plus[8] on January 1, 2014, provided by the European Union (EU), which enabled access to 27 EU markets with the export of 6,000 product lines at reduced tariffs conditional on the implementation and establishment of monitoring mechanisms and transparent reporting on 27 international core conventions of the ILO. In this regard, Pakistan's third decent work country program (2016-2020) was launched, in which the major priority areas were promoting decent work in rural economies, promoting job creation for youth and vulnerable groups and promoting compliance with international labour standards through social dialogue.

Along these lines, the ILO and EU signed on to a six-year project for international labour and environment standards (ILES) in Pakistan worth €11.6 million implemented by the ILO and Worldwide Fund for nature to promote labour and environmental standards among public and private institutions. To improve the institutional capacity of the Labour Department, the ILO launched the Dutch-funded program to strengthen labour inspection in Pakistan; so far, 331 labour inspectors, including 318 men and 13 women from all over Pakistan, are involved.

The primary role of the ILO is to implement decent work approaches aligned with economic and social policies of the respective country. Pakistan has signed the ILO core conventions that enabled the ILO to work closely with local formal and informal institutions of Pakistan to improve the local institutions' capacity (labour inspector numbers and effectiveness) and to suggest rectification of national labour laws to align with global standards.

One of the major concerns identified by workers during the fieldwork was wages. Following the 18th Amendment to the Constitution of Pakistan, the provisional government became responsible for setting a minimum wage for workers working under the boundary of respective provinces. The Government of Punjab Wage Board is responsible for setting minimum wage criteria for workers according to their skill level. Thus, wages are based on the classification of workers.

Social Governance and Social Upgrading

Workers' unions and associations

In Sialkot, most of the home-based soccer ball stitchers were working to improve their livelihood. The practice of using home-based stitchers evolved when soccer ball manufacturing enterprises decided to outsource stitching work to employees to complete in their homes in order to tackle the frequent stitchers' trade union strikes that took place in the 1970s in Sialkot soccer ball clusters as part of a push for improved working conditions. These home-based soccer ball stitchers are not formally recognised under the Pakistan Factory Act 1936, and as a result, they are deprived of the

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[8] GSP Plus is in addition to normal GSP arrangements and is granted to developing countries for compliance with international labour standards.

minimum wage, overtime payment and social security benefits (Lund-Thomsen & Coe, 2013). Thus, the third-party labour contractor phenomenon erupted, with the contractors serving as factory agents responsible for interacting with factories and home-based stitchers to take orders, distribute materials and ensure delivery on time. Hence, home-based stitchers did not have any mechanism through which they could become familiar with market conditions and wage issues, which created an opportunity for third-party contractors to exploit them.

In addition, due to the emergence of home-based stitchers, child labour became an issue of concern. The prime reason was that in families, children had an opportunity to learn the stitching skills and engage in the stitching process. This social transfer of skills was recognised as a key mechanism for the transfer of employable skills. Nevertheless, child labour issues were debated in international forums, and allegations were made that several multinational firms were deliberately outsourcing manufacturing in countries where labour was cheap, and children were involved in labour activities. During a field visit to Sialkot, it was observed that home-based stitchers established informal workers' associations to tackle issues such as appropriate and timely wages. Although all stakeholders agreed to provide labour rights to home-based stitchers, these changes were not implemented due to the scattered nature of home-based stitchers (Khan, 2007). When one member of the workers' association was asked what prompted him to form an association, he replied:

> *Individually, we had no power to bargain with contractors. Whatever wages they offered, we accepted, but the wages were very low, which made it hard for us to survive. Thus, I asked many stitchers to join together so that we could ask for better wages.*

From another interview with home-based stitchers:

> *We stitch footballs [soccer balls] with hard work and try to deliver on time, but we receive our payments very late from contractors. Now we do not trust contractors anymore. Therefore, we ask for payments in advance.*

Another home-based stitcher was asked about support from the government:

> *They [government officials] do not care about us and do not know what our problems are.*

Thus, home-based stitchers realised that forming an association was a key mechanism to obtaining proper wages from contractors. In summary, the three key reasons the associations were formed were lack of trust, lack of bargaining power and lack of support that forced stitchers to establish associations to negotiate with contractors on wages. Due to the establishment of associations, the contractors became responsible for providing the wages that were decided upon by the association and providing payments on time.

The analysis of data reflected several barriers in the formalisation of unions at the bottom of the GVCs. Regarding horizontal governance, the freedom of associations was violated on a large scale in the industrial area studied due to weak government capacity to enforce labour regulations. Further, in vertical governance, lead firms were responsible for implementing a code of conduct in their supplier factories that focused on the health and safety conditions of workers through regular monitoring. However, lead firms were less concerned with implementing good working conditions in clusters where suppliers were linked with home-based workers. As a result, the need to increase the

government institution's capacity to enforce labour regulations and amend existing labour laws to bring home-based workers into formal networks was essential.

International NGOs

As noted, the core purpose of the Atlanta Agreement was to remove child labour activities from homes where soccer balls are stitched, so an independent monitoring unit of child labour (IMAC) was established. This unit maintains a complete list of villages where soccer balls are manufactured so that during random visits child labour can be identified and minimised.

The Director of IMAC was asked during an interview about how IMAC contributed to diminishing child labour:

> *Our prime concern is to eliminate child labour activities from stitching units, both in centralised stitching centres and home-based stitching centres. For that we have a specialised unit of monitoring officers that randomly visits each village and respective stitching centres to ensure that no child is involved in stitching activity, and if such activity is found, we inform factories of anyone involved and then the factories withdraw their orders from that location. A report is available on our websites; we are doing our best, and now child labour activities have been nearly eliminated from stitching units.*

Figure 1 portrays the interaction of public, private and social governance in the soccer ball industry of Sialkot.

Figure 1
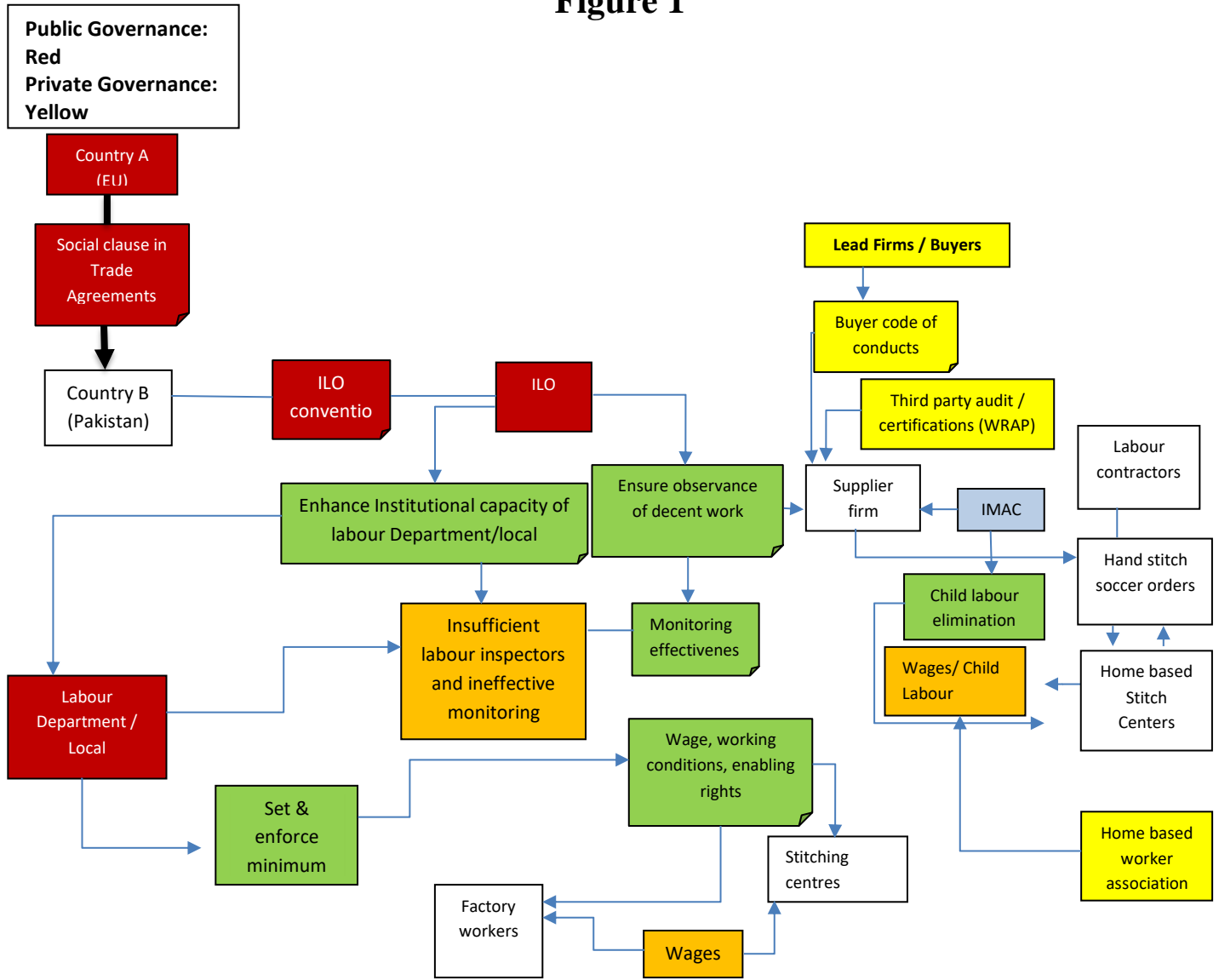
Discussion and Concluding Remarks

In GVCs, the economic actors are embedded in different institutional environments, which presents difficulties in the enforcement of social agreements (Brousseau & Glachant, 2008). Thus, formal institutions are complementary in interacting with the governance structure of lead firms. Contrary to this, another camp argues that informal institutions are not effective but instead promote corruption and favouritism that undermine the performance of market governing institutions (Arnott & Stiglitz, 1991). However, the role of informal institutions becomes vital when the formal institutions' effectiveness is weak or lacks authority (Peng et al., 2008). There is still debate about the role of informal institutions in the social development of workers in developing countries (Lund-Thomsen & Lindgreen, 2020), but they may provide solutions to different problems that enhance coordination among actors and facilitate the formal institutions' functioning (Peng et al., 2008). As discussed by Ponte et al. (2019):

Actors, institutions, and norms external to the value chain also shape GVCs governance, for example through regulation, lobbying, civil society campaigns, and third-party standard setting. Institutional actors, including states and multilateral institutions shape GVCs by providing a mechanism for signatories to enforce, or not enforce, regulations and a platform for negotiating the terms of international trade agreement. (p.120)

Strong encouragement from NGOs and for their reputation, lead firms developed their codes of conduct and established a monitoring mechanism to enforce the codes. This practice was widely accepted due to the absence of a strong global social justice system (Brammer et al., 2012) and the inability of developing countries' governments to implement their labour laws due to poor institutional quality (Gereffi & Lee, 2016). Despite the effectiveness of the codes of conduct, several scholars critiqued the monitoring mechanism (Locke et al., 2013). The major criticisms focused on whether the auditors monitoring social compliance could be trusted and whether they reported the actual factory conditions since the internal audits are conducted by lead firms. Moreover, if monitoring was outsourced to a third party, like an NGO or other organisation, critics questioned if they possessed the necessary technical competence and expertise for social audits.

In response to this criticism, several procedures and rules were established to ensure transparency through monitoring by independent organisations like third-party audits along with internal audits from local NGOs and authorised independent labour associations. Hence, the collective monitoring recently termed as 'synergistic governance' (Lund-Thomsen, 2019, p.285) is helpful for improving working conditions, particularly in countries where the state's capacity for implementation of standards and laws is low (Gereffi & Lee, 2016).

As the GVCs operate throughout cross-border networks that surpass the role of state institutions, the multilateral governance structure is essential (Mayer & Pickles, 2008). For the implementation of the multilateral governance structure or national labour regulations, the role of the labour inspector becomes critical, particularly for inspection of small workshops and home-based workers or piece rate workers linked to GVCs. Overall, public governance is vital for improvement in working conditions (Gereffi, 2018), specifically in Sialkot, where government enforcement of labour regulations has been almost non-existent.

Another viable path for better working conditions at the aggregate level can be a set of complementary trade-incentive policies for low-income export-oriented countries adhering to high social standards. The EU's GSP and GSP Plus schemes for those countries that do not have export

diversification and are vulnerable to one segment provide one example. Initially, the GSP scheme was not witnessed as a viable engine for better working conditions due to several obstacles at the domestic level. However, it was later refined, and monitoring intensified through independent monitoring by the ILO.

In the World Summit of United National General Assembly 2005, all leaders agreed that to overcome vulnerability and poverty through, productive employment is an indispensable vehicle. For that, ILO is responsible for assisting countries in order to develop strategies to implement decent work agenda along with their national objectives (Thomas & Turnbull, 2018). The ILO developed a decent work agenda that emphasised fair and sustainable working opportunities for developing and developed countries alike irrespective of economic conditions (Deranty & MacMillan, 2012). In developing countries, often the employment also take place within the boundaries of the home where the employment and social life interact and overlap (Coe & Jordhus-Lier, 2011, Danish & Khattak, 2020). Such employment is more visible in rural communities where wages are considered protection payment that improves the livelihoods of families (Pyke & Lund-Thomsen, 2016). However, social right of workers working in informal sector is still a big question mark for the institutions and still mechanisms ensuring implementation of decent work principles in that sector is missing.

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APPENDIX A

Interviews Questions (Firms)

Governance Network

- For how many buyers are you working?
- Does the relationship of your firm with the buyers vary according to the specialization of the product?
- What drives you to engage with single or multiple buyers? What is the percentage of production taken by your largest customer [buyer]?
- How and why do buyers force you not to engage with other buyers?

Business Activities

- How do you and your buyers share information and responsibility for research and product development? What is the process of sharing information and responsibility?
- How do you decide and manage the lead time demanded by customers[buyers]?
- Under what conditions you outsource your orders to sub-suppliers?
- Which season is considered as peak time? How do you manage peak time orders, what type of strategies you follow and why? And what benefits you receive by following such strategies?
- Under what conditions you hire temporary workforce? What is the process for hiring temporary workforce? What are benefits that are associated with hiring a temporary workforce?
- How do you decide the workload for each worker? what are factors that force you to increase or decrease workload or production target of each worker?

Economic Upgrading

- What types of products are produced in your factory? Have you changed the product range during the past five years?
- Why did you change the product range?
- Did global buyers influence this decision?
- How new product range has a higher value-added than the previous one?
- How did buyers' support you to improve products or processes?
- Have you incorporated technology to produce goods? What drives you to incorporate technology? And what benefits you gained after the installation of new technology?

Social Upgrading

- What are the key factors that force you to improve your work floor? How is it beneficial to your business? And how it has improved the work quality and quantity?
- When do you prefer to give social security registration for workers? and when you don't go for workers' registration?
- How wages affect your prices? In your opinion being an employer, what are the factors that the Government should consider while setting wages? Which aspects fall under your jurisdiction?
- In your opinion why trade associations should not be allowed? How do they affect business either in a positive and negative way?

- Why are you following such CSR practices, how it is beneficial for your business?
- What benefits are you providing to your workers? Under what conditions you bring changes in such benefits

APPENDIX B

Focus group discussions with workers (Discussion Sheet)

Could you please describe a typical working day in the factory? [Starting from the morning, how you reach the factory, what type of work you perform, how many pauses [breaks]you have, where you eat, when you leave, any other detail you would like to share].

We can see (if it is published) the code of conduct that the factory follows. This probably means you often meet auditors. What is your opinion about this practice? Can you remember what was the situation before the audits start? What are the main issues where and when things have changed? Are you happy with your work? Is there anything connected to your work or to the workplace that makes you unhappy/uncomfortable? What are the things you would like to change if you could?

Do labour inspector visits? How often /If yes do they talk with workers? Have your ever casted vote for the union? How your disputes and matters are resolved in the factory? what are the main priorities concerning your social conditions?

APPENDIX C

Interviews Questions (Government Officials and NGO Representative)

- What are your inspection criteria? How do you decide the inspection time and factory? How do you start the inspection?
- How do you see the management' attitude towards monitoring factories?
- What difficulties/challenges you face while monitoring factories?
- What sort of resources do you need while visiting factories?
- Have you ever attended training or workshop from international organizations like ILO? Do they guide for better monitoring? What changes do you feel after getting training?
- What do you think of how mobile phone technology can be used for effective monitoring and complaints?
- What is a method by which workers' can launch their complaints? How we can empower workers?
- What is the process of registration of workers? How workers' registration process can be expedited?

Linkage of Organizational Justice and Employees Cognitive Work Engagement: Power Distance Orientation Matters

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Abstract

This study aims to examine the impact of four dimensions of organizational justice on employees' cognitive work engagement with the moderating role of power distance. Using convenience sampling technique, a survey of 307 employees in the telecom sector of Pakistan was carried out in the cities of Rawalpindi and Islamabad. Data were gathered using self-administered questionnaires. SPSS and Smart PLS have been used for data analysis.The findings reveal that procedural, distributive, and informational justice are effective in determining cognitive work engagement of employees whereas interactional justice does not influence cognitive work engagement. Moreover, power distance moderates the relationship between procedural and interactional justice and cognitive work engagement but it does not moderate the relationship between distributive and informational justice and cognitive work engagement of employees in the telecom sector of Pakistan. The study implication, limitations, and suggestions for future research have also been discussed.

Keywords: Procedural Justice, Distributive Justice, Interactional Justice, Informational Justice, Power Distance, Employee Cognitive Work Engagement.

Introduction

Employment is an essential exchange amid workers as well as a firm within which both parties possess the opportunity to get something from their association. During the 1980s, this exchange relationship was based on the notion that employers provided employees with job safety as well as promotion. In return, employees would repay via working sixty to seventy hours per week and whatever job was demanded by organizations. This working scenario has altered quite dramatically in recent times. Now employees are more aware of their rights and have a preference for different types of rewards in form of involvement in decision making as well as organizational equity. The idea of organizational justice is important since it is the key driving factor that enables the employees to stay dedicated and loyal to the organization for long (Agarwal, 2014; Nazir et al., 2018; Mushtaq, Elahi & Khan, 2019).

The last decade has been marked by extensive globalization as well as foreign competition. With the advent of these changes, the significance of hiring, sustaining as well as handling resources that may assist in enhancing and improving the firm's competitiveness has been vital for the success of any firm (Nadiri & Tanova, 2010). As per Strom, Sears, and Kelly (2014), one of the important characteristics of successful and prolific industries is that they comprise important workers that engage themselves in their work mentally, emotionally as well as physically. Nurturing as well as maintaining this level and kind of workforce may spare organizations approximately $350 billion annually. Hence firms must try to establish participative job surroundings to enhance worker engagement (Osborne & Hammoud, 2017).Through elements of corporate fairness, provision of managed as well as reasonable job surroundings, firms can increase the levels of worker engagement among their staff that will improve the overall performance of organizations (Bakotic & Babic, 2013).

Corporate fairness describes a situation whereby workers hold beliefs about fair and ethical treatment from their bosses and their responses to fair or unfair behaviors (Suliman & Al Kathairi, 2012). According to Moazzam et al. (2018) employees feel motivated when they are dealtwith fairly in an organization. Organizational justice has four main components i.e. procedural justice, distributive justice, interactional justice, and finally informational justice. Distributive justice is used to describe a situation of employees' outlook of the fairness of results of their efforts whereas procedural fairness is used to depict situations whereby the ethicality of systems and procedures are assessed in deciding upon those results. Interactional justice states to the type and nature of social conduct employees receive at their workplace and informational justice means the degree to which employees receive an explanation for the decisions made by the organization and its agents (Al-Zu'bi, 2010).

The distributive justice concept emerged from 1950 to 1970 and has its foundation on the equity theory presented by Adams (1965). It sheds light on the fair allocation of assets. The procedural justice concept emerged between 1970 to 1990 and centered upon fair processes in place of allocation of assets. Interactional and informational fairness concepts emerged after the 1980s and focus on interpersonal characteristics related to fairness. Nowadays, researchers are concentrating on

a different domain, named "Integrative Wave" that involves using all types of justice into the overall category of "organizational justice".

Culture is one of the most significant elements that affect organizational fairness. Among all the five cultural dimensions specified by Hofstede (1980), power distance (authority remoteness) is of the utmost importance when it comes to determining organizational justice. Hofstede (1980) concluded that differences exist in the degree of workers' reception of authority remoteness within various civilizations. Several cultures like Pakistani culture have more authority remoteness than various civilizations within the West, where the reception of level of authority remoteness is lesser and unacceptable. So the research on authority remoteness differences within cultures marked by more authority remoteness at the private level is appealing.

A significant area of research on corporate fairness delineates the notion that workers depict intense cognitive and affective responses in a situation of injustice as compared to a situation marked by just decision-making. 'Voice' is a salient feature of corporate fairness representing the situation of worker involvement in the corporate planning process. Culture is one of the salient aspects which influence how workers respond to the level of voice given in organizational settings. In cultures marked by more authority remoteness, workers accept authority remoteness and show less intense reactions when given unfair treatment lower opportunity to participate within corporate planning (Yuan & Zamantili, 2009).

'Social Exchange Theory' by Blau (1964) is useful in this regard (Cook, Cheshire, Rice & Nakagawa, 2013). It states that human beings, by nature tend to respond and equate the level of job contentment they receive at the workplace. A positive and fair treatment by bosses fosters job contentment and encourages employees to respond by depicting corporate citizenship conduct, innovative problem resolving as well as higher cognitive work engagement and vice versa.

Different variables have been used by researchers between organizational justice and its outcomes. For instance, Strom, Sears, and Kelly (2014) investigated the influence of organizational justice on work engagement in the presence of transactional leadership as a moderator. According to their results, procedural and distributive justice has a significant and positive effect on work engagement and low transactional leadership would strengthen this relationship. Deconinck (2010) explored the effect of organizational justice on organizational and supervisory trust in the presence of perceived organizational support as a mediator. The results reveal that distributive justice positively affects organizational and supervisory trust through perceived organizational support. Loi, Lam, Chan (2012) tested the rapport between job insecurity and organizational justice, and the role of ethical leadership is studied as a moderator. It was found that the effect of organizational justice on job insecurity is negative whereas ethical leadership acts as a moderator between organizational justice and job insecurity.

The research on organizational justice is significant because those employees who perceive fairness are reported to have a higher level of organizational commitment, trust in the boss, and hence

cognitive work engagement (Cheung, 2013). Nowadays, organizations face many challenges like restructuring, layoffs, technological advancement (Aslam et al., 2016; Mujtaba & Senathip, 2020). These changes resulted in unemployment and injustice practices in organizations especially in developing countries (Aslam et al., 2015; Pan, Yan & Hao, 2018). In this context, this study aims to examine the impact of all four measurements of organizational justice, namely, distributive, procedural, informational, and interactional justice, on the cognitive work engagement of employees with the moderating role of power distance in Pakistan. Cognitive work engagement is relatively a new construct and there are very few published articles on it (Saks, 2006; Baumruk, 2004). As suggested by He, Zhu and Zheng, (2018), the relationship between interactional and informational justice has not been tested earlier with cognitive work engagement. Furthermore, Faruk and Van (2016) carried out a study on the impact of organizational justice on employee performance. They suggested examining the cultural differences as these may affect employee's justice perceptions. So to address this gap, this study aims to explore the moderating role of power distance between organizational justice and employee cognitive work engagement.

Hypotheses Development

In the following section, the relationships between various variables of the study have been discussed and hypotheses have been developed.

Cognitive Work Engagement

Job engagement is one of the important notions of HR for researchers as well as policymakers as it helps generate employee dedication, contentment as well as better performance. To get a competitive edge for organizations, firms are in growing need of hiring workers that are mentally as well as physically engrossed within work. Much of the previous literature on job engagement has neglected the cognitive aspect of job engagement that is crucial for the other two types of job engagement to exist as well (Agarwal, 2014; Pham-thai et al., 2018).

As suggested by Babcock, Robberson, and Strickland (2010), there persists a massive variety within employees regarding the extent by which they exercise energies, devotion as well as put forth their interest in their job. There are 3 elements of job engagement consisting of emotional element, physical element as well as the cognitive element. The physical element involves the effort exerted to carry out the task, the emotional element involves being passionate and 'putting one's heart into one's job' and finally the cognitive element involves being mentally and intellectually engaged in work to the extent that everything else is overlooked. The 'vigor' or mental energy element describes the situation of the extensive degree of mental flexibility meanwhile task performance as well as enduring obstructions. Loyalty or 'dedication' component involves possessing a feeling of essentialness, motivation, conceit, and test on the job. Assimilation of the 'absorption' element involves full fixation, satisfaction, as well as immersion on an individuals' task, such that there is speedy time surpassing as well as individual experiences issues in separating himself/herself from a

task (Babcock, Robberson & Strickland 2010). The researchers further suggested that cognitive work engagement is dissimilar from workaholism.

Individual assets "(such as optimism, self-efficacy, self-esteem)" involves people's feeling related to their capacity about how much they can effectively manage as well as cast influence on their surroundings. These encouraging self-assessments anticipate objectives fixation, inspiration, task execution, and task as well as life fulfillment along with other positive consequences.

The researcher suggested that three different work situations foster cognitive work engagement: meaningful work, the security of work as well as being more cognitively available/ present at work. These will tend to increase the cognitive work engagement of employees that will ultimately lead to emotional and physical work engagement as well (Agrawal, 2013). Cognitive work engagement will lead to better performance of workers as they will lead to favorable emotions and favorable fitness of employees that lead to better overall performance (Bakker & Demerouti, 2008).

Distributive Justice and Cognitive Work Engagement

Distributive fairness is the next element of corporate fairness. It means the degree to which employees believe that the consequences of employee's efforts are fair, just, and impartial.

Skarlicki and Folger (1997) exhibited that distributive fairness represents the fairness of the boss whereas procedural fairness is representative of the fairness of structures and systems within the organization. Fair allocation of results generates corporate trust. This leads to cognitive work engagement and job contentment as well as lesser organizational quitting and hence, improved corporate results.

Colquitt and Rodell (2011) narrated that "equity theory by Adams (1965)" is useful in this regard. It states that workers are motivated by justice. They compare their contribution to an organization with the yield they are getting from the organization and then compare this proportion of contribution/yield with fellow workers. If they believe that their ratio of contribution and yield is lesser than fellow workers then injustice persists and employees feel distressed.

Colquitt et al., (2012) in another study suggested that organizational management should distribute important outcomes via equity principle in which rewards should be distributed based on employee contribution to the organization. By taking just decisions regarding performance assessments, wages increment, bonus payouts, and other job-related tasks would foster management better capability, loyalty to employees, dependability as well as official behavior. This will generate cognitive trust among employees which will consequently lead to cognitive work engagement among employees.

'Expectancy theory of motivation suggests inspiration is impacted via conviction that exertion would generate better task execution '(expectancy)' and better task execution would generate higher recompense '(instrumentality)' which would be appreciated '(valence)' by workers. Since

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distributive equity tends to be more concerned with equity of consequences of effort, this category of justice possesses a sturdy relationship with 'instrumentality'. Along these lines, we can suggest that the distributive equity impression of workers would tend to influence the commitment of workers. Within every organization, workers possess a set of convictions and notions regarding the mechanism by which a firm would craft organizational choices. If workers feel that the choice-making mechanism is varied from their convictions, they will suffer from 'cognitive dissonance. Hence as a consequence, workers would be uneasy and would undergo task dissatisfaction and lesser cognitive work engagement (Nadiri & Tanova 2010). So the second hypothesis of the study is as follows:

H₂: Distributive justice affects the cognitive work engagement of employees positively and significantly.

Procedural Justice and Cognitive Work Engagement

McFarlin and Sweeney (1992) expressed that "procedural justice refers to the perceived fairness of the means used to determine the amounts of compensation employees receive".

Procedural equity involves justice related to choice-making procedures. There are six features of just procedures comprising of "consistency, bias suppression, accuracy, correctability,ethicality, and the degree to which they allow voice" (Colquitt & Rodell, 2011). As suggested by Deconinck (2010), procedural equity has a higher connection with employee satisfaction with the organization in contrast with distributive justice that has a higher connection with worker satisfaction with the boss.

Colquitt, Lepine, Piccolo, Zapata, and Rich, (2012) in another study suggested that due to procedural equity, a predictable, as well as reliable environment, will be created in organizations.

Procedural fairness alludes towards worker view of the fact that whether higher sanctioning authority or firm gives them just dealing. Procedural fairness includes impartial, legitimate choice-making laws as well as an open door for workers' participation within choice-making procedures. Procedural equity is renowned as a crucial firm equity element that can have a significant effect on worker accommodating attitude as well as job execution (He, Zhu & Weing, 2014).

Skarlicki and Folger (1997) presented the view that the response to unjust procedures depends on the situation of workers. If an employee is in a powerful position, he will adopt the direct approach of taking vengeance like theft as well as vandalism. If he is in a weaker position, he will resort to indirect measures like mental removal of loyalty and dedication with organization, etc, and vice versa. Hence the first hypothesis is suggested.

H₁: Procedural justice affects the cognitive work engagement of employees positively and significantly.

Interactional Justice and Cognitive Work Engagement

Nadiri and Tanova (2010) claimed that employees' outlook regarding justice at the workplace is an important determinant affecting employees' cognitive patterns as well as behavior.

Interactional equity refers to the nature of conduct workers get at the workplace amid institutional activities. Two classifications of interactional equity exist according to previous researchers comprising of interpersonal equity as well as informational equity. These classifications have many aspects in common, yet few researchers clearly distinguish them as unique and varied from each other since both generate a varying impact on workers' equity outlook within the organization. It incorporates different activities that show communal compassion, like whether workers are being handled with esteem and respect by their bosses.

Deconinck (2010) claimed that interpersonal equity involves authorities' conduct with employees in terms of "honesty, sensitivity, and respect".Loi, Lam, and Chan (2012) added that interactional equity may have a higher connection with workers' relationship towards boss in contrast to worker relationship with the organization.

Colquitt et al., (2012) explained that interpersonal equity would lead to cognitive trust as a sense of professionalism as well as an image of official behavior of organization will be promoted if management sticks to the principles of dignity as well as politeness with employees. This will foster cognitive trust among employees that will be effective in generating cognitive work engagement among employees.

'Expectancy theory of motivation suggests inspiration is impacted via conviction that exertion would generate better task execution '(expectancy)' and better task execution would generate higher recompense '(instrumentality)' which would be appreciated '(valence)' by workers (Al-Zu'bi, 2010).

As satisfaction is directly linked to enhancing employee work engagement (cognitive, physical, and emotional) as suggested by Nadri and Tanova (2010), we can say that interactional justice will be positively associated with cognitive work engagement. Hence the third hypothesis is:

H₃: Interactional justice affects cognitive work engagement positively and significantly.

Informational Justice and Cognitive Work Engagement

Informational equity alludes to the fact regarding how much workers are given justification of choices devised by the firm as well as its operators.

Colquitt and Rodell (2011) claimed that informational equity involves giving an appropriate justification as well as truth presented within organizational decisions. Justifications must be sufficient (lucid, rational as well as sufficiently exhibited) as well as given within appropriate timeframe to ensure workers' outlook of equity within organizations as these would tend to help affectees understand the reason for their dilemmas. In addition, they can be a valuable source of ensuring that employees sense that they are valued and have respect as well as reverence by their employers.

Similarly, Zapata, Olsen, & Martins, (2013) proposed informational equity may be significant for workers as it tells them about their footing as well as position in front of their bosses. If bosses adhere to interpersonal as well as informational equity, it positively justifies an employee's individuality as well as a feeling of self-significance e.g. if, in an organization, a boss keeps adequate, sincere well as a lucid information exchange with workers and approaches a worker with deference and authenticity, it suggests worker would be esteemed by the boss. Hence the fourth hypothesis is:

H4: Informational justice affects cognitive work engagement positively and significantly.

Power Distance and Cognitive Work Engagement

According to Wang et al. (2012) individual-level power distance refers to "the extent to which an individual accepts the unequal distribution of power in institutions and organizations". Hofstede (1980) stated that the six aspects of civilization he identified through his researches are relevant only at the organizational level. However, many other scholars have generated consensus on the notion that these aspects of civilizations are well applicable to the private stage as well as influencing the motivation, trust, and cognitive work engagement among workers (Kirk-man & Shapiro, 2001). It has been discovered that workers with more authority remoteness values are less likely to respond more strongly with the use of deviant behaviors to situations of injustice within organizations in contrast to lesser authority remoteness cultures. This is mainly due to the fact that among workers with lesser authority remoteness values, workers establish customized or close connections with their bosses. This is contrasted among workers with high authority remoteness values where communal remoteness is preferred with little involvement of employees in choice-making procedures (Farh, Hacket & Liang, 2007).

Begley, Lee, Fang & Li (2002) narrated that even though Hofstede's five cultural elements have been devised at a national level but management researchers also commonly make use of them at individual and organizational levels as well. They suggested that because employees in high power distance accept and place trust in the authorities' decisions hence their loyalty to the organization and

work will remain intact or will improve with the policies/ procedures of the organization. On the other hand, employees with lesser authority remoteness beliefs tend to develop closer social relations with bosses since they call for employee participation in choice-making procedures so their work engagement also improves. So fifth hypothesis of the study is:

H₅: High power distance affects cognitive work engagement positively and significantly.

Moderating Role of Power Distance Between Distributive, Procedural, Interactional, Informational Justice and Employee Cognitive Work Engagement

Gomez et al. (1999) suggested that authority remoteness can be an effective moderator influencing the relationship between corporate fairness and organizational related activities of employees and managers. Employees within more authority remoteness norms have more respect for authority and have clearly defined pecking order relationships. They expect little involvement within choice making procedures of organizations. On the other hand, with lesser authority remoteness values, requires paying little attention to pecking order relationships, disseminate knowledge relevant to organizational circumstance delegate authority and encourage employees to take initiative and contribute ideas to corporate planning process (Loi, Lam & Chan, 2012; Reddy & Scheepers, 2019)

Although among both employees with high and lower power distance orientations, there is the negative impact of organizational injustice on job contentment and cognitive work engagement of employees, the intensity of these reactions is different. Workers with more authority remoteness orientation accept authority remoteness and show less intense reactions when given lower opportunity to participate within corporate planning. Conversely, workers with low power distance orientation show higher emotional reactions when given lower opportunities to participate within the corporate choice-making process (Yuan & Zamantili, 2009).

Previous literature alludes that interpersonal equity has a favorable impact on worker dedication as well as cognitive work engagement (Davidescu et al., 2020).However, workers who believe that they have suffered emotional damage due to interpersonal inequity will tend to respond via unfavorable responses as per the notion of 'social exchange' (Sprecher, 1986). In addition, workers also tend to respond negatively to their damage to reputation as well as contravention of their faith in supervisor and organization. Researchers claim that interpersonal inequity may lead workers into a state of unfavorable self-identity, which makes them feeling feeble as well as incompetent. To regain their distinctiveness, workers tend to respond by taking revenge from their bosses by involving in abnormal or 'deviant' activities to keep up with their 'faces and uphold their respect. These vicious activities would tend to be more extraordinary within employees with lesser authority remoteness nations since these would go against the communal customs.

Similarly, on the contrary, note, just as well as reverential interactional conduct with employees will make them feel fulfilled as well as esteemed by the organization. It will entail employee faith in the institution as well as its agents, leading to favorable task-connected consequences in form of organizational citizenship behavior, job contentment as well as cognitive work engagement. Hence,

in the same way, the positive behaviors will be more experienced among employees with high power distance orientation as it will be seen as distinct from the norms (Wang, Mao, Wu & Liu, 2012). Patient and Skarlicki (2010) insisted that individuals feel hesitant in conveying negative information. This is true even for circumstances in which the sender of information is kept confidential, he/she undergoes little monetary or non-monetary charges and not accountable for information delivered. This is because the delivery of negative information may generate social expenses as well as unfavorable assessment by conversationalists. If the element of high interpersonal equity is present within sending messages (in contrast to lesser interpersonal equity) and communication involves reasonable and adequate justification for unfavorable news, unfavorable communication will possess more chances of getting acknowledged by the receiver, organizational powers would be evaluated as just and workers will have higher contentment with regard to consequences they receive.

At the point where pioneer decently takes care of workers interpersonally, workers build up positive conviction that their pioneer follows regard as well as respectability tenet. Following the principle of exchange or 'reciprocity,' workers reimburse pioneer via the presentation of OCBI to satisfy boss that focuses on better task performance, as well as OCBO to safeguard goodwill associated with the firm (Cheung, 2013). Informational justice is likely to lead to cognitive work engagement but the response will be positive and less intense between employees with low authority remoteness values than between employees with high authority remoteness values and vice versa. Hence the following hypotheses are proposed:

H_6: Power distance moderates the relationship between procedural justice and cognitive work engagement in such a way that the relationship gets stronger when power distance is high.
H_7: Power distance moderates the relationship between distributive justice and cognitive work engagement in such a way that the relationship gets stronger when power distance is high.
H_8: Power distance moderates the relationship between interactional justice and cognitive work engagement in such a way that the relationship gets stronger when power distance is high.
H_9: Power distance moderates the relationship between informational justice and cognitive work engagement in such a way that the relationship gets stronger when power distance is high.

Research Framework
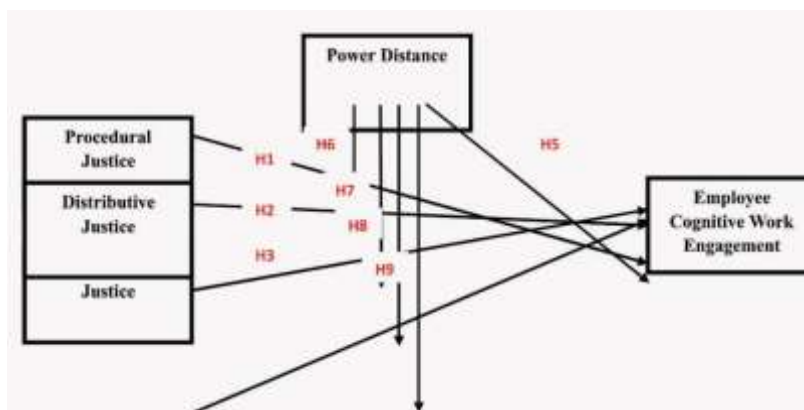
Figure I: Theoretical Framework

Research Methodology

Research Design

This is explanatory research where the effects of all components of organizational justice on employee's cognitive work engagement with the moderating role of power distance were investigated. Using convenience sampling, 450 questionnaires were distributed to the employees of the telecom sector of Islamabad and Rawalpindi. Out of 450, 358 filled questionnaires were received back, thus giving a response rate of 79.55%. Among them, 307 questionnaires were found to be accurate and filled and thus were utilized for further analysis. All variables were measured on a 5 point Likert scale ranging from Strongly Disagreed=1 to strongly agree=5.

Procedural justice was measured using a 7-item scale developed by Colquitt (2001). Distributive justice was measured using a 4-item scale developed by Colquitt (2001). Interactional justice was measured using a 4-item version by Colquitt (2001). Informational justicewas measured using 5-items scales developed by Colquitt (2001). Power distance was measured using a 6 items scale developed by Dorfman, and Howell (1988). Employee cognitive work engagement was measured using a 3 items scale developed by He, Zhu, and Zheng (2014).

Confirmatory Factor Analysis

The Average Variance Extracted (AVE) shows the adequate convergent validity of all dimensions. For adequate convergent validity of the scale, a minimum threshold of AVE is 0.50. Convergent validity will be sufficient to measure any concept if the value of AVE is < 0.50 however composite reliability (CR) is > 0.60 (Fornell & Larcker, 1981; Abid & Ahmed 2020). For testing construct validity, a further mark i.e. construct reliability is also utilized for verification of dimensions. A value of CR $\geq$0.70 is considered as the minimum standard range of validity. The values of reliability between 0.6 and 0.7 are considered adequate if the remaining measures of validity are fine. Figure 2 indicates the results of Confirmatory Factor Analysis (CFA) levels 1 and 2 by utilizing SmartPLS 3.2.0 software.
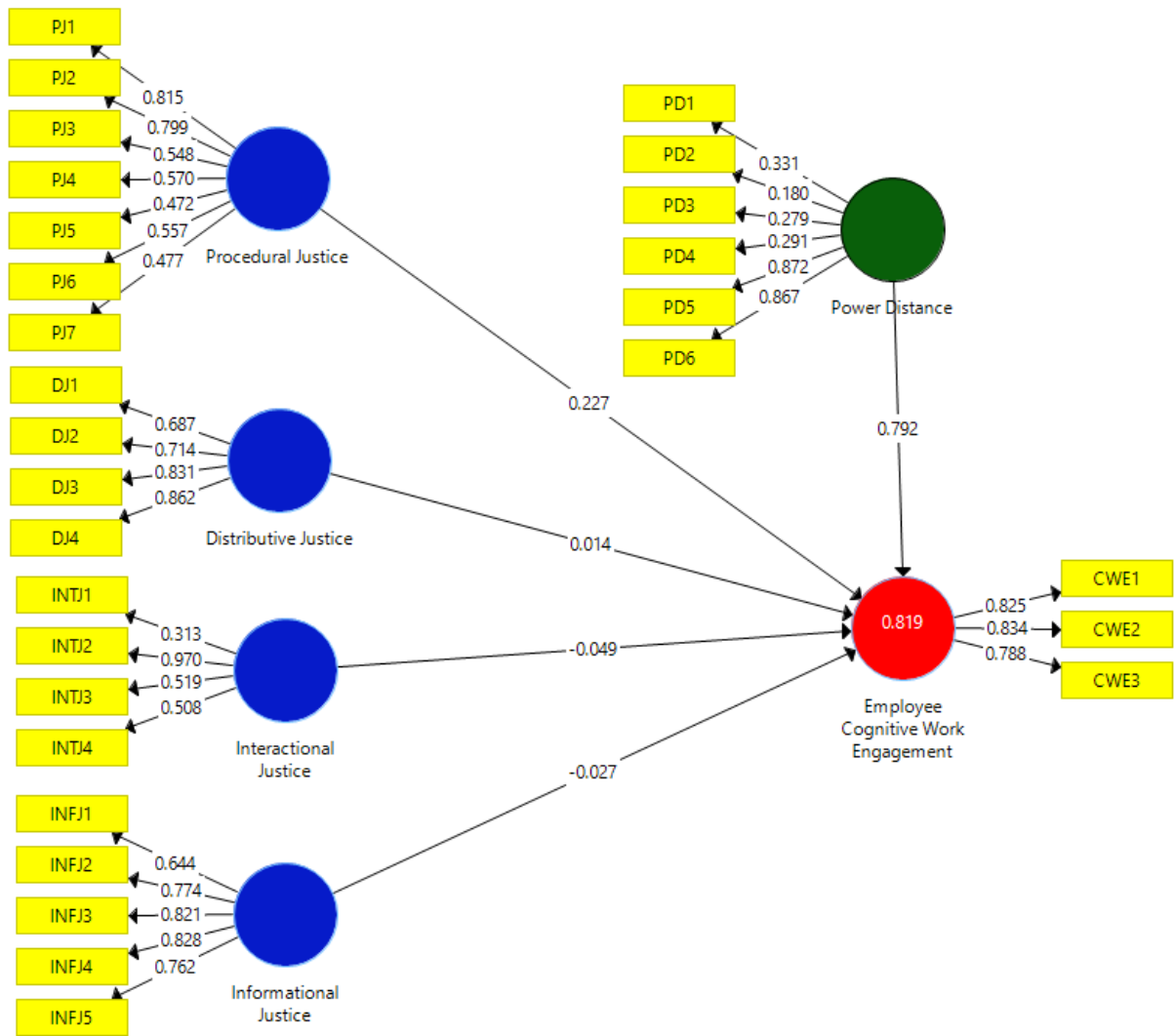
Figure II.CFA Level 1

The results found that loading for each item is above >0.5 except for 07 items. These items were PJ5, PJ7, INTJ1, PD1, PD2, PD3 and PD4. So, these items were omitted in the next analyses. The factor item loadings of every item & convergent validity are shown in Table I.

Table I: Factor Item Loadings and Convergent Validity

Construct	Items	Loadings	A	CR	AVE
Procedural Justice	PJ1	0.815			
	PJ2	0.799	0.712	0.791	0.445
	PJ3	0.548			
	PJ4	0.570			
	PJ5	0.472			
	PJ6	0.557			
	PJ7	0.477			
Distributive Justice	DJ1	0.688	0.795	0.858	0.604
	DJ2	0.714			
	DJ3	0.831			
	DJ4	0.862			
Interactional Justice	INTJ1	0.313	0.731	0.776	0.552
	INTJ2	0.970			
	INTJ3	0.519			
	INTJ4	0.508			
	INFJ1	0.644			
Informational Justice	INFJ2	0.774	0.826	0.878	0.591
	INFJ3	0.821			
	INFJ4	0.829			
	INFJ5	0.762			
Power Distance	PD1	0.331	0.696	0.868	0.767
	PD2	0.180			
	PD3	0.279			
	PD4	0.291			

	PD5	0.873		
	PD6	0.879		
Creative Work Engagement	CWE1	0.822	0.749	0.857	0.666
	CWE2	0.837			
	CWE3	0.788			

The results indicate alpha reliability, composite reliability, and AVE were in an acceptable range
.

Table II: Discriminant Validity

	DJ	CWE	INFJ	INTJ	PD	PJ
Distributive Justice	0.777					
Employee Cognitive Work Engagement	0.223	0.816				
Informational Justice	-0.074	0.078	0.769			
Interactional Justice	0.036	0.104	0.41	0.743		
Power Distance	0.158	0.837	0.133	0.195	0.836	
Procedural Justice	0.357	0.605	-0.047	-0.095	0.474	0.667

Table II indicates that all values of obtained correlation are < 0.85; a minimum predefined threshold value, reflecting an acceptable level of HTMT as a standard to assess discriminant validity.

Results

Frequency Distribution

For analysis of demographics, descriptive statistics were used. Bartlett, Kotrlik, and Higgins (2001) states that the sample size should be above 100 respondents to conduct research. The first part of the questionnaire included the demographic features relating to the respondents including their gender, age, income as well as education. Results depict that 130 respondents were male and the remaining 177 were females. The percentage of male respondents was 42.3% and that of females was 57.7%. The responses also depict that 130 (42.3%) of employees belonged to 25-30 years of age group, 74 (24.1%) of respondents were 30-35 years old, 38 (12.4%) respondents were 35-40 years old and 65 (21.2%) respondents were above 40 years old. Moreover, 53 (17.3%) employees had household earning less than Rs. 20000, 93 (30.3%) had household earnings within the range of Rs. 20000-30000, 82 (26.7%) had household income in between the range of Rs. 30000-40000 and the remaining 79 (25.7%) respondents had a household income above 40000. In addition, 16 (5.2%) employees had done matric, 112 (36.5%) employees had done intermediate, 116 (37.5%) employees had done bachelors and the remaining 63 (20.5%) employees have the qualification of Masters and above.

Correlation

This table summarizes the value of mean, standard deviation as well as the correlation among the different study variables.

Descriptive Statistics & Correlation

Table III: Means, Standard Deviations and Correlation

		Mean	Std. Deviation	1	2	3	4	5	6
1	Procedural Justice	3.56	0.90	1.000					
2	Distributive Justice	3.55	1.06	0.397	1.000				
3	Interactional Justice	3.86	0.76	-0.094	-0.009	1.000			
4	Informational Justice	4.22	0.61	-0.069	-0.070	0.478**	1.000		
5	Power Distance	3.82	1.07	0.375**	0.139*	0.143*	0.130*	1.000	
6	Cognitive Work Engagement	3.86	0.97	0.498**	0.202**	0.060	0.076*	0.888**	1.000

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).
Total Sample Size *n=307*

Correlation Analysis

Results from the correlation analysis are presented in Table III. It shows that there is a significant positive correlation between procedural justice and cognitive work engagement (r=.498 at a value of p≤.01**). This provided initial support to hypothesis 1. Distributive justice has also a significant positive correlation with cognitive work engagement (r=.202 at value of p≤.01**). On the other hand, an insignificant correlation is found between interactional justice and cognitive work engagement (r=.060). Informational justice has a significant relationship with cognitive work engagement (r=.076, p≤.05*). Power distance is significantly and positively correlated with cognitive work engagement (r=.888 at a value of p≤.01**) which provided initial support to hypothesis 5.

Regression

Regression Analysis

Regression analysis is used to predict the forecast value of one variable based on one or two other variables. The following table shows beta values, R^2, and ΔR^2 values as well as moderating regression analysis done for this study. There was no control variable causing variation in the dependent variable so demographics were not controlled in step 1 of regression analysis.

Moderating Regression Analysis

Table IV: Moderated Regression Analysis

Predictor(s)	Cognitive Work Engagement		
	B	**R^2**	**ΔR^2**
Step-I			
Procedural Justice	.192**		
Distributive Justice	.015**		
Interactional Justice	-.053		
Informational Justice	.003**		
Power Distance	.750**	.822	.820
Step-II			
PJ*PD	.055**		
DJ* PD	-.035		
INTJ*PD	.085**		
INFJ*PD	.010	.839	.017

*P<0.05, **P<0.01, ***p<.000, ns= none-significant
 n=307

Moderated Regression Analysis

The model of the study also consisted of moderating variables i.e. power distance. The results are presented in Table IV. According to the results, hypothesis 1 "Procedural justice positively affects Cognitive Vork Engagement of the Employees" is supported at ß=.192** at a significant level of p ≤.05. Hypothesis 2 "Distributive Justice positively affects Cognitive Work Engagement of the

Employees" is supported at ß=.015, p < .05. Hypothesis 3 "Interactional justice positively affects Cognitive Work Engagement of the Employees" is not supported at ß=.-.053, p > .05. Hypothesis 4 "Informational justice positively affects Cognitive Work Engagement of the Employees" is supported at ß=.003, p < .05. Hypothesis 5 "Power Distance positively affects Cognitive Work Engagement of the Employees" is supported at ß=.750**, p ≤.05. Hypothesis 6 which was "Power Distance moderate the positive relationship between Procedural Justice and Cognitive Work Engagement, in a way that High Power Distance will strengthen the positive relationship Between Procedural Justice and Cognitive Work Engagement" is supported at ß= .055** at a significant level of p ≤ .05. Hypothesis 7 which was "Power Distance moderate the positive relationship between Distributive Justice and Cognitive Work Engagement, in a way that High Power Distance will strengthen the positive relationship Between Distributive Justice and Cognitive Work Engagement" is not supported. Hypothesis 8 which was "Power Distance moderate the positive relationship between Interactional Justice and Cognitive Work Engagement, in a way that High Power Distance will strengthen the positive relationship Between Interactional Justice and Cognitive Work Engagement" is supported at ß=.085** significant level of p ≤ .05. Hypothesis 9 which was "Power Distance moderate the positive relationship between Informational Justice and Cognitive Work Engagement, in a way that High Power Distance will strengthen the positive relationship Between Informational Justice and Cognitive Work Engagement" is not supported.

Discussion and Conclusion

The study focused on the impact of four types of organizational justice on employees' cognitive work engagement in Pakistan with moderating role of power distance. According to the results, the first hypothesis "Procedural Justice has a positive impact on cognitive work engagement of employees' is supported. This finding is consistent with the findings of previous studies conducted by He et al., (2014), Strom et al. (2014), Khan, Chishti, and Safdar (2019).The second hypothesis that distributive justice has a positive impact on the cognitive work engagement of employees is also supported which is aligned with the previous study conducted by Agarwal (2013). The results do not support the third hypothesis i.e. interactional justice has a positive impact on the cognitive work engagement of employees. This finding is not consistent with the findings of previous studies. As suggested by Aquino, Lewis, and Bradfield (1999), individual personality is an important determinant of how employees perceive levels of justice present in an organization. So even though interactional justice might be present in the organization, if every action of a boss is perceived as negative, the presence of interactional justice would lead to a decrease in cognitive work engagement of employees.

The fourth hypothesis "Informational justice has a positive impact on cognitive work engagement of employees" is also supported by the finding of the study. This is consistent with the findings of the study carried out by Patient and Skarlicki (2010) and Kalay and Turkey (2016). The fifth hypothesis "Power Distance justice has a positive impact on cognitive work engagement of employees" is supported which is consistent with the findings of earlier studies like Begley et al. (2002), Farh, Hackett, and Liang (2007), etc.

The results support the sixth hypothesis i.e. power distance moderates the positive relationship between procedural justice and cognitive work engagement, in a way that high power distance strengthens the positive relationship between procedural justice and cognitive work engagement. This finding is consistent with the findings of Begley et al (2002). Cognitive work engagement will increase among employees with high power distance values with less intensity compared with employees with low power distance values. This may be because in high power distance countries workers accept the unequal distribution of power and require that bosses keep authority to make most decisions to them only. They are complacent with the unequal distribution of power so justice will lead to an increase in cognitive work engagement but with less intensity compared to employees' low power distance values. The seventh hypothesis "Power distance moderate the positive relationship between distributive justice and cognitive work engagement, in such a way that high power distance strengthens the positive relationship between distributive justice and cognitive work engagement" is not supported. As suggested by moderation, cognitive work engagement will reduce among employees with high power distance orientation. This may be due to the reason that generally corruption is common in high power distance countries and among employees with high power distance values (Kimbro, 2002), which suggests that if rewards were distributed fairly many employees will tend to leave, if not all, a major portion of the rewards that they get. Hence with the presence of distributive justice, the cognitive work engagement of employees will decrease among employees with more authority remoteness values and vice versa.

The hypothesis that power distance moderates the positive relationship between interactional justice and cognitive work engagement, in a way that high power distance will strengthen the positive relationship between interactional justice and cognitive work engagement is supported. As per moderation results, cognitive work engagement will increase among employees with high power distance values when interactional justice is present. This is consistent with the results of previous studies like Agarwal (2013), Moliner et al. (2008), etc. Finally, the last hypothesis which describes that power distance moderates the positive relationship between informational justice and cognitive work engagement, in a way that high power distance will strengthen the positive relationship between informational justice and cognitive work engagement is not supported. This finding is not consistent with the findings of previous studies. As suggested by Farh et al., (2007) in high power distance countries workers accept the unequal distribution of power and require that bosses keep authority and information to themselves only. So an increase in informational justice will have no impact on the cognitive work engagement of employees. Another reason may be that corruption (Husted, 1999) is a common norm among employees in the telecom sector so an increase in distributive justice does not lead to an increase in cognitive work engagement of employees. Moreover personality of an important determinant of whether employees perceive interactional justice is present in the organization or not. Hence even if interactional justice is present, employees perceive the boss as negative, an increase in interactional justice will lead to a decrease in cognitive work engagement as employees will suspect every act of the boss. In addition, if negative information is continuously passed on to employees (Patient and Skarlicki, 2008), even if appropriate justification is given to employees, this will lead to a decrease in cognitive work engagement of employees. Moreover, employees with more authority remoteness values are complacent with the

unequal distribution of power so justice does not generate much satisfaction and work engagement for them.

Managers should understand the type of working environment they need to establish to ensure employee cognitive engagement in their work, resulting in better employee performance and hence organizational performance. Managers may need to change the existing procedures and systems of reward distribution, employee interactions, and disseminating information to employees in a way that enhances their effectiveness and efficiency and hence pave way for the smooth functioning of organizations. Managers should give particular emphasis to procedural justice and interactional justice at the workplace in Pakistani organizations. They can do this by formulating procedures that are "consistent, ethical, enable bias suppression, accurate, correctable and allow employee voice". They can also promote interactional justice via treating employees with respect, dignity, politeness without using improper remarks or comments.

Managers should also identify whether employees possess high or low power distance orientation in their organizations. By identifying these two groups, managers can motivate employees with high power distance orientation through procedural and interactional justice and can motivate employees with low power distance orientation through procedural distributive and interactional justice. In this way, they will be able to enhance the cognitive work engagement of employees and ultimately overall organizational performance.

The research incorporates the relationship of organizational justice with work engagement along with the moderating role of power distance in Pakistan. Other variables like moderating role of Islamic work ethics, abusive supervision, employee personality traits, etc. remain largely unexplored in Pakistan. Future researches may focus on these variables in the context of employee work engagement. Moreover, current research caters tothe telecom sector. Finally, future researches may be carried out in other sectors like fertilizer, cement, hoteling, etc. with a larger sample size.

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A Spatial panel Analysis of Carbon Emission and Food security

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Abstract

This study examines the influence of co2emission on food security proxied by food supply by spatial econometrics models from 2000 to 2014 globally. We also comprised the socio-economic variables in the model for the bias of variables. The global Moran's I and local spatial autocorrelation technique used for spatial dependence, and they suggested the spatial dependence exist in the cross-sectional units. Therefore, we used the spatial panel model to check the spatial spillover effect of co2emisson on food supply. The chosen spatial panel Durbin model outcomes showed that the co2emission, population growth, and unemployment rate have negatively decreased the given country's food supply level and its neighbour countries. Simultaneously, the GDP and arable land are beneficial for the given country and its adjacent countries. Moreover, the real coefficients, direct, indirect (spillover), and the total effects of the carbon emission indicated that the carbon emissions decrease food security levels in both of this country and its nearest neighbouring countries. Therefore, the carbon emissions level needs to be reduced to improve food production (in quality and quantity) and increase the food supply level.

Keywords: Food security, Co2emissions, spatial panel Durbin model, spatial dependence

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Introduction

The number of undernourished peoples significantly decreased over the last decades. However, in many countries, whether they are developed or developing countries, this problem still exists (Masron et al., 2020; Long et al., 2020; Fusco et al., 2020; FAO, 2020). The weres situation of undernourishment and food insecurity in developing countries (FAO, 2020). The food and agricultural organizations (FAO) showed that the number of undernourished people raised from 668 million in 2010 to 688 million in 2019 globally (FAO, 2020). The majority of these hungry people resides in Africa (250 million), Asia (381 million), Latin America and the Caribbean (48 million). Food insecurity has a significant impact on health, overall economic growth of the region, individual productivity, social peace, and general for learning (World Bank, 2006; Upton et al., 2016; and Adebayo et al., 2016). Therefore, food security issues are in many regions of the world. This problem could highlight the value of carbon emission conditions as a basis for food security.

Food considered global public goods that must be made accessible to all at any time (Hamilton et al., 2003). Such as, all humans have the right to sufficient food on a daily basis, and no one can be exempt. The food and agricultural organization (FAO) suggest that food availability is not only a matter of food to feed everyone. They argued that the safety and quality of food production and distribution and easy accessibility to food are also fundamental things. In response to this issue, the food security idea has been extended to include four features: food availability, food accessibility, food utilization, and food stability. Unfortunately, due to the unavailability of 124 countries food security indicators data, we are not able to use all these dimensions, but we can use the proxy for food security that is food supply (kcal/capita/day) . in many works of literature, the food supply used as a proxy for food security as (Pangaribowo et al., 2013; van Weezel, 2017; and Ogunniyi et al., 2020). Therefore, in this study, the food supply is utilized as a proxy for measuring food security in the selected countries.

Several studies have identified many significant causes of food security theoretically and empirically, such as climate change by theoretically Ecker and Breisinger (2012); Pangaribowo et al., (2013) and empirically KINDA and Badolo, (2014); BEN ZAIED and Zouabi (2015); Mahrous, (2019), argued that the climate change is the crucial factor affecting food security. Population growth by theoretically Malthus (1798) and empirically Brown (1981); Masters et al. (2013); and Godbers and Wall (2014) investigated that the population growth is the critical factor affecting food security negatively. Income in terms of GDP by theoretically Devereux (1993) and empirically Pingali (2007); Tadase et al. (2016) argued that good income increase the economic access to food by improving the households ability to purchase food relative rich and nutrient. Unemployment by theoretically Black et al., (2008); Pangaribowo et al., (2013) and empirically Loopstra and Tarasuks (2013); Etana and Tolosa (2017) stated that unemployments decrease the level of food security. And arable land by theoretically Neo-Malthusian theory and empirically by Liu et al. (2010); Schneider et al. (2011); and Smith (2013) claimed that without arable land the food production is impossible to secure. Further information about these control variables used in this study is available in the literature section.

There is no empirical research according to our best understanding that Investigate co2emissions' impact on global food security by spatial panel data modelling. If so, there are limited empirical studies that examine the effects of co2emission on global food security and that too without spatial effects. Therefore, This study inspects the importance of spatial spillover in connecting co2emission and food security in 124 developed and non-developed countries from 2000 to 2014 and using spatial panel models to examine the relationship between the co2emission (and

other socio-economic factors) and food security with spatial effects. Moreover, to examine the direct, indirect (spillover), and the total effect of carbon dioxide and other socio-economic variables: population growth, income, unemployment, and arable land.

In addition to the introduction, the rest of the study distributed into five section: section 2 cover the extant literature review on the topic; section 3 shows the methodology of the study; Section 4 reveal the results and discussion; and Section 5 conclude the study.

Literature Review

Malthus (1798) has found that if the population growth rate is high, food shortages may occur and thus decrease food security in the long-term. More specifically, if the number of humans grows faster than the food, such as products of agriculture and industries, food insecurity may occur. Hence the systematic analysis of Brown (1981). Tian et al. (2016) and Masters et al. (2013) found that speedy population growth is followed by increases demand for food, leading to the food's shortage. For example, many regions have significant increases in water and land uses due to rapid population growth (Masters et al., 2013). Likewise, in another study by Tian et al. (2016) found that higher population growth would significantly affect food provisions and lead to food conflict, mostly in Southeast Asia, Sub-Saharan Africa, Northern and Central South America. With the passing of time, Malthus theory revived in the form of NeoMalthusians. NeoMalthusians add only to the classical theory of Malthus that the agricultural land is the basic and vital source for food security incrementation. By empirically, Liu et al., (2010); and Schneider et al., (2011) has identified that arable land has a positive and statistically significant impact on food security. Liu et al. (2010) provide empirical evidence that agricultural land shortage is becoming due to industrialization like in china. Furthermore, Schneider et al., (2011) argued that arable land is the vital source for agricultural activities. Lack of arable land could lead to food shortage, resulting in the number of undernourishment people increasing. On the other side, Ahmad (2016) concludes that forest area is an important determinant for the incrementation of global food security. The third factor, income proxied by GDP, is the basic and crucial factor affecting food security, particularly play a vital role in food accessibility. In this context, Devereux (1993) and empirically Pingali (2007); Tadase et al. (2016) argued that good income increase the economic access to food by improving the households ability to purchase food relative rich and nutrient. Furthermore, unemployment is also a crucial factor affecting food security negatively (Pangaribowo et al., 2013). For instance, Etana and Tolossa (2017); and Loopstra and Tarasuk (2013) found that the foremost significant factor in developing economies that increase the level of food insecurity is the high unemployment ratio. This might be explained that with a high unemployment rate, residents of the country would have inefficient income to purchase food items.

Another group of scholars thinks about food security with biofuel and co2emission, thought this line is related to Subramaniam et al.,(2019) empirically detected the influence of biofuel and co2emission on food security for 51 developing countries during the period 2001-2016. The study used a generalized panel method of moments (GMM) technique for estimation. The outcome indicated that biofuel and co2emission decrease the level of food security in developing countries. And they argued that increasing the production of biofuels raises food prices and thus adds to malnourishment. Several scholars used the co2emission as a proxy for climate change, environmental degradation to check its effects on food production. Such as Abdullah et al., (2020); Masron et al., (2020), both scholars used co2emission as a control variable to check its effects on developing countries' food security. And both are argued that co2emission decreases the country's level of food production,

resulting in the level of food insecurity increases and the number of hunger have arisen. Similarly, Rasul and Sharma (2016) indicated that environmental deterioration presents a major threat to food production as a result of changes in rainfall distribution, co2emission, high temperature, water availability, biodiversity and land resources (Dawson et al., 2016). Kinda and Badolo (2014) empirically indicated the impact of climatic change on food security for the 71 emerging economies during the period 1960-2008. The study used food supply and the proportion of undernourishment of people as an index for food security. They also included food price, land under the cereal production, arable land, and rainfall as explanatory variables in their model. Their findings show that the proportion of undernourishment people increases, and food supply reduced by climatic variability in developing countries. This negative effect is more significant in African sub-Saharan economies than in other emerging nations. The outcome of the study also showed that the negative effect of climate change is worsened in the occurrence of civil battles and is more significant for the nations that are exposed to food rates shock. Mahrous (2019) empirically examined the global climate changes and food security linkage in East-African-Community (EAC) for the period 2000-14. They employed pooled fixed-effect method for estimation purposes. Their results indicate that rain has a significant positive impact on food security. Besides, Some scholar finds out the positive impacts of co2emission on food security. Such as, Akbar et al. (2018) checked the effect of co2emission on the production of food from 1964 to 2015 using the ARDL method. They argued that the environmental changes due to the level of co2emission have no negative impacts on food production.

The above past studies are related to multiple crucial factors to food security. Unfortunately yet, no study finds out from the above past studies on spatial analysis of co2emission and food security. So, the purpose of this research work is going to investigate the effect of co2emission on food security in developed and developing countries with spatial effects.

Methodology and Data Specification

Data

As we discussed above, this research work aims to examine the impact of Co2emmission on global food security for 124 countries from 2000-2014 using spatial models. In our sample comprises those countries whose data are physically available. The dependent variable is food security, while the predictor variables are Co2emission, arable land, population growth, GDP per capita, and unemployment. Data of food security proxied by food supply (kcal/capita/day) collected from food agricultural and Organization (FAO) while Co2emission, population growth, arable land, GDP per capita, and unemployment obtained from world bank (WB). For further explanations of these variables, please visit table.1.

Table.1. Variables descriptions

Variables	Descriptions	Source
Food security	Food security measured through the food supply in terms of (kcal/capita/day).	FAOSTAT
Population growth	The annual percentage increase in population	World Bank
Co2emission	carbon dioxide emission per capita (in metric ton)	World Bank
Unemployment	The percentage of unemployed labour in the total workforce.	World Bank
Arable land	agricultural land as a percentage of the total land	World Bank
Gross domestic product	GDP per capita in constant (2010 US$)	World Bank

Source: FAO, (2020) and World Bank, (2020).

Methodology

Our main analysis is based on the spatial panel data technique. Originally, the spatial econometric model was used by Anselin in the context of crosssectional data (Anselin 1988). Besides, several scholars used spatial models for the cross-sectional data (Rupasingha and Goetz, 2007; Elhorst, 2014a; Balta-Ozkan et al., 2015). Our study's importance is to consider the spatial effect of food security (that is, the given country's food supply depends on its nearest neighbour countries) for panel data. According to Elhorst (2003); Anselin et al. (2008); and Elhorst (2014), the spatial panel data model is a model of spacetime for panel data that is an expansion of the general nesting spatial models for cross-sectional data. There is three types of spatial panel data model are commonly utilized that are: spatial panel data model (SPDM), spatial-lag panel data model (SLPDM), and spatial-error panel data model (SEPDM). The general form of the SPDM given as follows (Elhorst, 2014b).

$$Y_t = al_N + \rho WY_t + X_t\beta + WX_t\theta + \mu + \xi_{tlN} + u_t \; ; \qquad where, \qquad u_t = \lambda Wu_t + \varepsilon_t \qquad (1)$$

Here t represents time, and l_N indicated the $N*1$ vector with the constant parameter a. Y denotes $N*1$ the vector of the explained (food security) variable for each unit (country) $i(where\ i = 1,2,3, ... N)$. While the other side of the explained variable "X" indicating $(N*k)$ matrix of the explanatory variable. WX, WY, and Wu indicate spatial interaction among the independent variables, the dependent variable and the error terms of the different spatial unit respectively. $\lambda\ and\ \rho$ are the spatial autocorrelation coefficients indicating the strength of the model's spatial dependence. The coefficient, which is to calculate, is $\beta\ and\ \theta$ an associated $K*1$ vector. W Denotes the spatial-weight matrix that captures the spatial correlation in our sample data. ξ Indicates time-period related effects. μ Represents the spatial specific effects or is an (N×1) vector of the intercept highlighting the effect of the excluded (omitted) individual-specific variable(s).

Moreover, when $\lambda = 0\ and\ \rho \neq 0, \theta \neq 0$. equation (1), can be expressed as a spatial Durbin panel data model (SDPDM) that can capture the spatial effects among explained and explanatory variables

that is WY and WX with ρ and θ being the spatial autocorrelation coefficient. The equation expressed as follows.

$$Y_t = al_N + \rho WY_t + X_t\beta + WX_t\theta + \mu + \xi_{tlN} + \varepsilon_t \qquad (2)$$

When $\rho \neq 0$ and $\lambda = 0, \theta = 0$, equation (1), may be considered as SLPDM that only captures spatial interaction effect among the explained variable WY, with ρ being the spatial autocorrelation coefficient.

$$Y_t = al_N + \rho WY_t + X_t\beta + +\mu + \xi_{tlN} + \varepsilon_t \qquad (3)$$

Finally, when $\lambda \neq 0$ and $\theta = 0, \rho = 0$, equation (1), could be considered as a SEPDM that only captures spatial interaction effect among the error term. The equation described as follows.

$$Y_t = al_N + X_t\beta + \mu + \xi_{tlN} + u_t \quad ; \quad where, \quad u_t = \lambda Wu_t + \varepsilon_t \qquad (4)$$

Elhorst (2014) suggested the tests that are the WALD test, likelihood ratio (LR) test, and the Lagrange multiplier (LM) test for the selection of the spatial panel data model from the above spatial panel models.

Model Selection and Spatial Effect Test

It is essential to investigate the spatial effects in our study before evaluating any spatial econometric model. Moran (1950); Ullah, (1998); and Elhorst (2010) recommended the global Moran's I test to detect the spatial dependence of the dependent (food security) variable. The formula for evaluating Moran's I index is.

$$I = \frac{n \sum_{i=1}^{n} \sum_{j}^{n} w_{ij} (x_j - \bar{x})(x_i - \bar{x})}{S^2 \sum_{i}^{n} \sum_{j}^{n} w_{ij}}$$

Where

$$S^2 = \frac{1}{n}\sum_{i}(x_i - \bar{x})^2$$

Where x_i and x_j show the food security rates of country i and j, respectively. The mean represents , and variance represents S^2. The value ranges from minus one to plus one, i.e. -1 to +1. A negative value shows negative spatial dependence, and a positive value means positive spatial dependence or spatial autocorrelation. The random spatial pattern appears when the index equal to zero. A -1 and +1 represents a perfect dispersion and perfect correlation.

For model selection, Elhorst (2014) recommended the Lagrange multiplier (LM) test to determine whether to establish an SDPDM, SLPDM, or SEPDM. Two kinds of (LM) test Anselin (1988) performed the Classical Lagrange Multiplier test (CLM) and the Robust Lagrange Multiplier (RLM) test.

Result Discussions

Descriptive Statistics

Table.2. Descriptive statistics

Variables	Mean	Median	Std.Dev	Min	Max	Count
Food Security	2819.376	2801.5	476.7818	1777	3825	1860
GDP	13391.29	5436.52	17448.79	194.8731	91565.73	1860
Co2emission	4.839367	3.19789	5.60744	0.049001	36.09166	1860
Population Growth	1.416856	1.275304	1.451821	-3.84767	15.17708	1860
Arable Land	16.1466	12.02346	14.25643	0.084006	64.14688	1860
Unemployment	7.671338	6.479	5.057171	0.319	33.473	1860

Table.2 displays the selected variables descriptive statistics. The summary statistics of all these variables are constructed before the logarithm. So, the average value of food security is 2819.376 with 2801.5 and 476.7818 of median and standard deviation, respectively. Similarly, the mean value of GDP, Co2emission, Population Growth, Arable Land and Unemployment is 13391.29, 4.839367, 1.416856, 16.1466 and 7.671338, respectively. The table also highlights the minimum and maximum values of the studied variables.

Global Moran's I Test Result

We utilized two types of test that global Moran and local Moran tests for the spatial dependence or the spatial autocorrelation in the cross-sectional units. The local Moran test is also known as local spatial autocorrelation. Both tests have revealed the results of spatial dependence.

For spatial dependence, two types of tests are conducted of these global Moran's I test result of the food security shown in the table.3, indicating that the positive spatial dependence in the world country-level food security in each year. It means that in our sample data have strong spatial dependence nor a negative or random spatial pattern. The different k-nearest neighbour (knn) weight indices used to describe the spatial relationship among countries. Because in our sample of countries have an island that why we used the 4-nearest neighbour (k-nearest neighbour method). Therefore, the global Moran's I test showed that food supply between countries is spatially dependent.

Table.3. Global Moran's I result

Years	Moran's I	P values
2ooo	0.6054	0.001
2oo1	0.6201	0.001
2oo2	0.6382	0.001
2oo3	0.6348	0.001
2oo4	0.6298	0.001
2oo5	0.6096	0.001
2oo6	0.5999	0.001
2oo7	0.5973	0.001
2oo8	0.6198	0.001
2oo9	0.6287	0.001
2o10	0.6145	0.001
2o11	0.5920	0.001
2o12	0.5724	0.001
2o13	0.5750	0.001
2o14	0.4642	0.001

Note: P-values < 0.01, Calculated by 999 Permutations.

Local Spatial-Autocorrelation Test Result

The outcomes of the local spatial-autocorrelation test are revealed in figure 1. The LISA map comprises four sets of observations: High-High, Low-Low, Low-High and High-Low. The High-High cluster shows the region with high-value surrounded by high-values, whiles the Low-Low cluster are thos e that have low-values and surrounded by low-values. Likewise, the rules apply to the Low-High and High-Low clusters. So, the local spatial autocorrelation also showed the spatial dependency between countries significantly. The local spatial autocorrelation is constructed based on the K4 spatial weight matrix. The findings are significant at the 5 percent level and support the occurrence of robust spatial dependence of global food security. Therefore, the global Moran's I, and local spatial autocorrelation result suggested that the spatial panel model is more reliable than other regression models to estimate the effect of co2emission on global food security.

2000
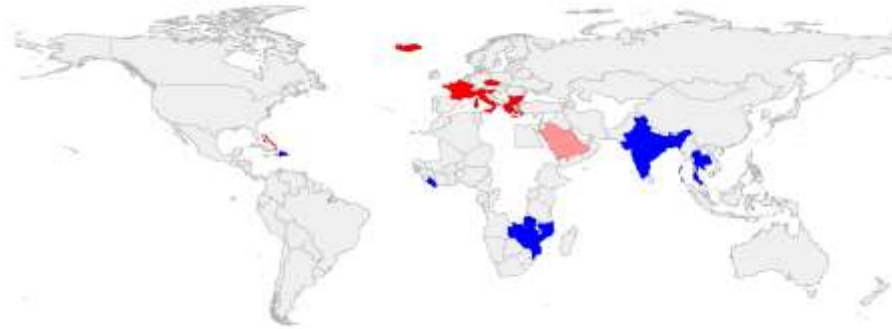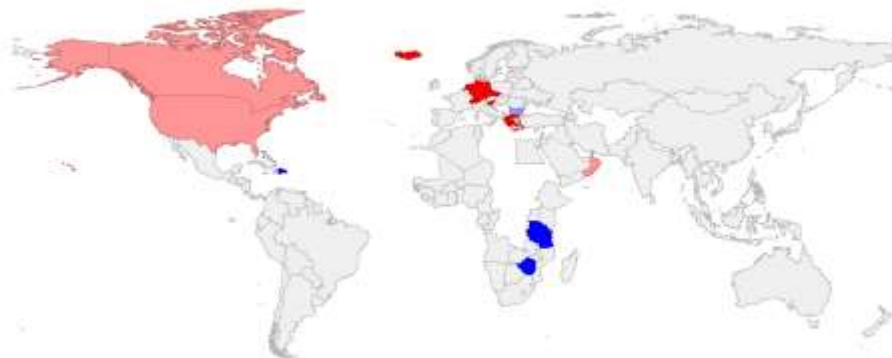
2014

Figure. 1. LISA map of food security in 2000 and 2014

The Econometric Models' Results

Estimation Results of The Non-Spatial Panel Models

Table.4 shows the findings of the econometric panel model without considering the spatial effects. Firstly, the Non-spatial panel data model is estimated. Hausman's value represents that the random-effect hypothesis should be rejected at a 1% significance level. Therefore, we relied on the fixed effect model. Further, the findings of fixed-effects, time-period effects, and the combination of fixed-effects and time-period effects are shown in column (2), (3), and (4), respectively. It is evident from column 2 of table 4 that only population growth is insignificant while the other chosen variables are statistically significant at a 1% confidence level. Furthermore, all the selected variables in the time fixed-effect model are significant at a 1 % level. Likewise, in the double effect model, i.e. column (3), population growth and GDP have an insignificant contribution to our dependent variable.

Table .4. Estimation Results of the non-spatial panel data model

Determinants	Non-spatial fixed effects Models		
	individual effect	time effect	Double effect
Co2emission	-11.614***	-28.411***	-17.646***
Population growth	-0.533	-73.763***	-0.027
Arable land	12.700***	4.507***	8.505***
Unemployment	-9.013***	11.072***	-7.953***
GDP	0.0137***	0.011***	0.0008
Constant	114.65***	116.36**	165.23***
R^2	0.190	0.572	0.119
LM spatial lag	160.21***	172.11***	24.825****
LM spatial error	150.13***	100.4***	22.778***
Robust LM spatial lag	11.471***	73.331***	2.0509**
Robust LM spatial error	1.386**	1.6265	0.003
Hausman test	122.25**	122.128*	125.29***

Note: Significant codes: ***, **, and * indicate the 1 per-cent, 5 per-cent, and 10 per-cent significance level.

Although, the robust and the classic LM tests illustrate that the H_O: no spatially lagged dependent variable should be rejected at a 1 % level of significance. The results remain consistent in either case, including the individual, and/or time-specific fixed effects. For instance, the value of the LM Spatial lag test is 160.21 (p<0.000), 172.11 (p<0.000) and 24.825 (p<0.000) in column (2), (3) and (4), respectively. However, we may not reject the H_O: no spatial autocorrelation in the case of robust LM spatial lag of the double effect and robust LM spatial error of individual effects because his values are not significant at any level of significance. In short, the findings propose that the H_O: no spatial effect should be rejected in favour of the spatial-lag panel model.

Estimation Results of The Spatial Panel Models

However, one needs to be cautious in employing the SLPDM when based on the LM tests' findings (LeSage and Pace, 2009). A more reliable method is to estimate the spatial Durbin panel model (SDPDM) and usage the estimation results to test whether the SDPDM can be simplified to the SLPDM or the spatial error panel data model (SEPDM). The appropriate way is to estimate both. The LR and the WALD tests show that hypotheses that the SDPDM is more reliable for further estimations than other models. In general, in the table.5 the two-way fixed-effect of SDPDM has a

relatively higher value of goodness-of-fit than the non-spatial panel data models see table.4, especially for the two way SDPDM (column (4) of table 5). Therefore, the two-way fixed effect spatial panel Durbin model is selected from all other models.

Furthermore, in table.5 all the variables are significant in the double-effects or two-way fixed-effect spatial panel Durbin model but in the case of individual and time fixed-effect model nor all the variable are significant. Even the spatial lag coefficients of all variables greatly impact food security in the two-way fixed effect spatial panel Durbin model. So, all the coefficients of all variables and their spatial lag coefficients are statistically significant at the 1% level, except the spatial lag of the unemployment are significant at the 5% level. Such as all the real coefficients of the variables and their spatial lag coefficients significantly impact food security, indicating that all these variables have affected the given country's food security and affected its neighboring countries' food security. For instance, the real coefficient and the spatial lag coefficient of the co2 emission are negative effects on the given country's food security and its nearest neighbour countries food security, indicating that the food availability amount is decreased in the given country and its neighbour countries due to high carbon dioxide. This result is similar to the result of Eric and Kinda (2016), who found that climate change negatively affects food security in the given country and its neighbour countries. Eric and Kinda also stated that the population growth rate has both a direct and an indirect negative and significant effect on the availability of the food. In this context, our control variable population growth also negatively affects the given country food security and neighbouring countries. Besides that, the sign of the GDP and arable coefficient positively impact food security for both in the given country and its neighbour countries. The GDP outcomes are in line with the consequences of Ardakani et al. (2020), who found that the economic conditions in terms of GDP and food price index are positively and statistically significant effect on the given country food supply and its neighbour countries. In a simple way, the spatial lag coefficients result of all these variables indicating that these variables affect the nearest neighbour countries' food security of the given country. At the same time, the real coefficients of these variables indicate that these variables affect the given country's food security.

Table. 5.   Estimation Result of spatial panel modes

Determinants	Spatial Durbin fixed effects model		
	Individual effect	Time effect	Double effect
Intercept	N/A	N/A	N/A
Co2emission	9.112***	2.923***	-12.374***
Population growth	2.610	-5.291***	-1.655***
Arable land	7.126***	4.505***	6.161***
Unemployment	-8.651***	4.332**	-7.744***
GDP	0.014***	0.007***	0.006***
W*fsindex	0.377***	0.324***	0.151***
W*co2emission	7.859***	-9.921***	-12.015***
W*population growth	-0.478	-7.047	-5.255***
W*arable land	5.087***	-2.844***	3.953***
W*unemployment	5.038***	2.603	-3.252**
W*GDP	-0.006***	0.001.	0.011***
R^2	0.60	0.62	0.63
Wald spatial lag/	85.247***	57.893***	47.765***
Wald spatial error	209.763***	98.761***	56.094***
LR spatial lag	77.897***	65.324***	47.989***
LR spatial error	188.987***	97.675***	45.897***

Note: Significant codes: ***, **, and * indicate the 1 per-cent, 5 per-cent, and 10 per-cent significance level.

Moreover, the model revealed substantial evidence for the presence of spatial dependence. Firstly, the spatial lag of the response variable, W*food security, is significantly positive. Secondly, the spatial lags of all the explanatory variables are significant. This another strong evidence for spatial dependence. After the estimation and discussions of the two-way fixed effect spatial panel Durbin model, it should be must to check the spatial effect of the two-way fixed spatial panel Durbin model.

Analysis of The Spatial Effect

The average direct effect, indirect effect, and total effects of all independent variables are present in table.6. The direct effects express the marginal effects of the changes in the independent variables of 1% on the same unit's dependent variable. The indirect effects are the marginal effects of the

independent variables' changes in 1% on all neighbouring units' dependent variable value. At the same time, the total effect is the sum of direct and indirect effects.

Table.6 spatial effects of the spatial panel Durbin model

Independent variables	Direct effects	Indirect effects	Total effects
GDP	0.0122***	0.001**	0.013***
	(22.99)	(2.91)	(10.47)
Co2emission	-27.676***	-5.856***	-29.532***
	(16.48)	(-5.60)	(7.53)
Population growth	-70.975***	-6.988***	-77.963***
	(-12.8)	(-3.60)	(-6.09)
Arable land	3.882***	0.899	4.781***
	(7.06)	(0.84)	(2.96)
Unemployment	-11.368***	-2.690***	-14.058***
	(7.62)	(3.54)	(3.91)

NOTE: Statistics in the parentheses show t-values. significant codes: ***, **, and * indicate the 1 per-cent, 5 per-cent, and 10 per-cent   significance level..

The average direct effect of the co2emissions is -22.99 (P=0.000). It indicates that a 1% rise in the level of the co2emission (for example, in the USA) leads to a 23% negative change in the USA's food security. Simultaneously, its indirect effect indicates that a 1% increase in the USA's level of co2emissions leads to a 5.9 % negative change in the nearest neighbour countries' food security of the USA. The total effect of the co2 emission is -29.99 (P=0.000). its indicates that a 1% increase in the level of co2emission, 29.53% decrease the level of food security in both of this country and its nearest neighbour countries. Similarly, effects of direct, indirect, and total for the population growth and unemployment rate. The direct effect of the GDP increases the level of food security in the given country. Its indirect effect also increases the level of food security in the neighbouring countries of the given country. While the arable land contributes to improving the given country's food supply but for its neighbouring countries may not be profitable. The total effect of the GDP and arable land result shows that the GDP and more agricultural land for food production of the given country increase the food supply level in both of this country and its neighbouring countries.

Conclusion

This study investigates the impact of co2emission and other socio-economic variables, i.e. unemployment rate, population growth and arable land, on global food security and using spatial panel Durbin model to examine the spatial effects of the co2emissions and other socio-economic variables on food security proxied by food supply (kcal/capita/day) for 124 developed and developing countries from 2000 to 2014. Before, we tested the spatial dependence using the global Moran's I and local spatial autocorrelation test. We thus found the spatial dependence of food supply between countries. After that, we finalized the spatial panel Durbin model from other spatial and non-spatial panel model based on R-square, LR-test, Wald-test, and LM-test. The finalized spatial panel Durbin model and its spatial effect result show that the co2emission has negatively played a crucial role in the decrementation of food security level in the given country and its neighbouring countries. The finalized regression model further argued that population growth and high-level of unemployment rate also negatively decrease the level of the food supply in both of this country and its nearest neighbouring countries. The other crucial factor to food security is the income coefficient result indicates that the high-income increase the access of people to healthy food and increase the food supply level in both of this country and its nearest neighbouring countries and *vice versa*.

Therefore, the selected countries need to reduce carbon emissions and develop a low carbon to increase food production in quantity and quality and nutritious food and food supply. It is recommended that government through extension workers in the various states ensures farmers are aware of the effects of CO2 and to educate them on the different adaptation strategies in order to boost GDP and Food Security. Finally, policy-makers should implement policies that will stimulate increased GDP such as carbon sequestration, reduction in industrial activities that have been identified to be major sources of carbon and other greenhouse gas (GHG) emission which will not only boost agricultural productivity but also promote FS. Delaying action is costly and may ultimately lead to higher CO_2 concentrations, consequently producing additional damages to the economy as a result of higher temperatures, more acidic oceans, and other consequences of higher CO_2 concentrations. Future studies in this area may examine whether the relationship between co2emission and other socio-economic variables on global food security is nonlinear or time-varying since the current study is based on a Spatial panel model.

Conflict of Interest

Declaration of interest: none

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Impact of Interactive and Supportive Service Innovation in Customer Retention through the Interplay of Value Creation and Participation

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Abstract

This study aimed to understand the customer retention process through customer value creation in the service industry bringing service innovation. The moderating role of customer participation was analyzed. The hypothesized relationships were tested on 548 responses collected through an online survey at one point in time through the structural equation modeling technique. Smart PLS3 was used for analysis and the result of the study indicated that customer retention is significantly influenced by service innovation through the customer value creation process and customer participation moderates the relationship. The results of this study were time-bound and only one service was considered. Other services e.g. banking, hospitality, and traveling can also be applied to generalize the model.

Keywords: Service Innovation, customer retention, value creation, S-D logic

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Introduction

In the present era of competition and technological advancement, firms need to be very innovative and vigilant (Malik, Awan & Nisar, 2020). Technology has influenced the business processes and provide more opportunities for success (Haq & Awan, 2020). In this regard, the service industry has got much attention from marketers, innovators, scholars, and academicians for the last ten years (Huang, 2011). Innovation is said as a socio-habitual process (Malik, Awan, & Nisar, 2020). Traditionally innovation in the service industry is viewed differently. Nowadays innovation is defined from a different perspective and in the services industry it is distinguishing from the traditional product innovation approach. Scholars have redefined the innovation and recent work distinguished it from the traditional perspective (Barrett, Davidson & Vargo, 2015). Some scholars have distinguished the services from products while others have a different view. They argued that no distinction is needed as products require services. Companies rather than focusing only on selling physical products emphasize selling integrated offerings. This leads to the development of new logic in services referred to as the service-dominant (S-D) logic. The focus of service industry scholars (Vargo and Lusch, 2008; Vargo, Maglio and Akaka, 2008). on S-D logic is being noticed considerably. In earlier work, the concept of service is conceptualized from good dominant (G-D) logic to S-D Logic. Technological advancement has pushed companies to focus on service innovation. It is the way of delivering benefits to customers (Boone, 2000). Diverse aspects of innovation were researched by various scholars including but not limited to characteristics of services (Chen, Hung, and Huang, 2015), delivery of services (Nijssen et al.,2006), processes, and strategies of services (Alam, 2006).

Moreover, multiple kinds of research anticipated various kinds of innovation and its impact, but less consideration was given to the service industry. It is vital for an organization to communicate with clients and to retain employees in service industries. As the business environment changed and new dimensions of technology emerged, future innovations are important for better future progressions (Fatima & Abbas, 2016). Current advancements have made it conceivable and new sort of action plans are created. Rare research is conducted on examining the role of service innovation in customer retention. In service industries, it is significant for specialist organizations to associate with clients to retain them. Customer retention through innovation was discussed (Tha-Ti and Yung, 2018), however, it is notable that retaining customers in the service industry is a great challenge. The service providers need to develop a new mechanism and provide innovative services for better retention. An example is a discussion of the customer retention process through satisfaction in the food and beverages industry (Tahir, Anjum, and Heilder, 2020), however, the underlying mechanism of customer retention through innovation is still considered challenging and needs further exploration. As any activity from firms may affect the consumers' retention level and their usage behavior (Mansoor, Awan, Alobidyeen¸ 2020). Services are deemed successful when existing customers are not switching and are retained by the service provider. With the use of technology, more choices are available to customers and there are more chances of switching (Mahmoud *et al.*,2017). Problems faced during the use of innovative products or services can be reduced by associating customer value creation (CVC), which ultimately directs to customer retention

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(Gronemus et al., 2010). Customer participation (CP) has played important role in the paradigm shift from G-D to S-D logic as described by Chan et al. (2010) in their study stating that CP plays an important role in value creation in services. The buffering role of CP in interactive services is still blurred and this study tries to fill this disparity. It examined the interactive and supportive characteristics of service innovation and its impacts on customer retention through CVC and moderating role of CP. More specifically, the model was tested in the telecom sector of Pakistan, aiming to understand the moderated-mediated relationship of supportive service innovation (SPSI) and interactive service innovation (INTSI) on customer retention (RT) through CVC and moderating role of CP is examined.

Literature Review and Hypotheses Development

Innovation themes are versatile and are termed important for firm growth and obtaining a competitive edge. Product and service innovationsare defined differently. Service innovation is categorized into radical innovation in the startups (Wang, Lo & Hui, 2003), and new services for the market that are currently being presented are known as incremental innovation (Jhonnson, 2000). As discussed by Wang , Voss and Zhao, (2015) service innovation has three different domains i.e. product, procedure,and technological change. Another categorization of service innovation is seen into three sorts by earlier scholars i.e. assimilation, demarcation, and synthesis (Edvardsson & Olsson, 1996;Salunke, Weerawardena & Mccoll-kennedy, 2013; Coombs & Miles, 2000;Snyder et al., 2016). Novel technologies are presented in service modernization and reflected as an extension of product innovation (Baron et al.,2012) from an assimilation attitude. The concept of service innovation is explained with G-D logic (Vargo & Lusch, 2004) and is termed as more radical than incremental (Edvardsson & Tronvoll, 2013). Present procedural and product innovations are considering service innovation by assimilation perspective. Companies need to coordinate with the client and the support system (i.e. non-specialized components) including the capacities of cutting-edge staff (Hip & Grup, 2005; Nijsen et al.,2006). The synthetic attitude postulates that any innovation falls under the service domain (Hsieh, Chiu, Wei, Rebecca & Cheng, 2013)supported by S-D logic. Consequently, service innovation can be considered as a process of utilizing specialized skills (information and talents), acts, tactics, and performance, serving all other entities or the entity herself. Innovation is also a method to create value for customers and deliver value to consumers (Skålén et al.,2015). Conclusively it can be stated that value is created and delivered to customers through innovation (Edvardsson & Tronvoll, 2013; Barrutia, 2013).

Traditionally, interactive service and supportive service innovations are a crucial part of all kinds of innovations in services. People think that services are provided to help core products. Government, transportation, businesses, hospitality, education, trade, computer, and information services are part of the supplier sector. The present research uses the interactive and supportive service innovation perspective to retain consumers. In the telecom sector,business support systems (BSS) are used for consumer assistance. Through interaction and support, companies retain consumers by value creation hence associated with interactive and supportive types of innovations. These activities create value for consumers and directly influence their emotional, social, and financial aspects (Salunke, Weerawardena & Mccoll-Kennedy, 2013).Customer feedback often results in the identification and

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realization of competencies and improvement of service through newness (Abushanab, Pearson & Setterstrom, 2010). INTSI is said as the degree to which an enterprise tailors its service offerings and its adjustments in terms of service provision and customization. Indirect adjustments that create value at the time of compensation make the new value proposition applicable to service provider innovation (Salunke, Weerawardena & Mccoll-Kennedy, 2013). A new service offer must be all-in-one; it should efficiently generate value (Salunke et al.,2013). There is a need to link the interactive and supportive aspects because through marketing activity association among both is reported (Mahajan, Vakharia & Chase, 1994). In the telecommunications sector, novel functionalities are established and proposed, requiring high consumer retention through a powerful support mechanism. This leads to the development of links between SPSI and INTSI. As Berry (1985) argued, separating the SPSI from the INTSI created problems. This disconnection can affect the sales and service quality of companies. SPSI's activities are not obvious to customers unless they do not interact with the firm. So, on these bases, H$_1$ is hypothesized as follows.

H1: There existsa positive relation between SPSI and INTSI.

Customer retention is the rate of measuring the number of customers who keep using the companies' product. It is considered a different concept as compared to customer loyalty, satisfaction, and trust (Gerpott et al.,2001). From the firm's perspective, it is important to retain employees to ensure profitability among other concerns. Customer retention would be higher with greater customer value (Anees, Noodin Anjum & Cavalier 2020). Also, greater service quality leads to customer retention (Miao, Zhang, Wu, Heijang, 2019). It is generally accepted that quality of service has a direct impact on retention therefore, if the quality of service is improved, retaining consumers would be easier (Soutar, 2001). Retaining consumers is crucial for industries in the present time for sustainability (Mennens & Gils, 2018). Innovationis undoubtedly associated with the quality of relationships in general (Walter, Müller, Helfert, and Ritter, 2003). Favorable customer support increases the level of positive emotions and retention (Haq & Awan,2020). According to Mahmoud et al., (2017), innovation increases the chances of meeting customer needs and providing a key to the business to reach the CR. Hence the below two hypotheses for the current study are proposed.

H2: INTSI is positively associated with CR.

H3: SPSI is positively associated with CR.

Customer retention described as a reaction to an assessment of perceived products or the performance of a service is entirely based on the customer's judgments about the value created (Flint, Woodruff & Gardial, 1997). Value perception is the customerestimate of value created by the vendor, considering the tradeoffs in a usage scenario(Flint & Mentzer, 2005). Prior literature in this regard suggests that value perceived by customers is an antecedent of CR. The association between perceived consumer value and CR has been empirically confirmed, as much of the literature on service marketing demonstrates that CVC is an essential element in obtaining CR (Hui 2003, Turel, Serenko & Bontis 2007, Earthy& Cronin 2008). Customer value creation is an important driver of

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CR because when consumers perceive higher value levels in an offer, they are likely to feel satisfied with their consumer experience and purchasing decision (Oh, 2000). Thus below two hypotheses are formulated.

H4: The relation between INTSI and CR is significantly mediated by CVC.

H5: The relation between SPSI and CR is significantly mediated by CVC.

Customer participation (CP) is defined in the context of customer interaction and participation for value creation for the current study. It is the extent to which information is shared, feedback is provided, and suggestions are made for decision-making processes (Bolton and Saxena-iyer, 2009). It also plays an important role in satisfaction and loyalty (Auh et al., 2007). However, the focus of new researches has changed, and CP is studied in new disciplines. CVC is theorized, and the role of CP is studied in past (Normann, & Ramirez, 1993). S-D logic supports the view that value is only created and determined by users (Lusch, & Vargo, 2006). Customers participate only when they find that service is interactive, and the participation leads to value creation. Customer active involvement during the interaction creates more value and CR (Bolton & Saxena-layr, 2009). In a volatile environment, customer participation is important to make innovation successful. INTSI and SPSI create higher value to customer when CP is high. Interpersonal relations and support add more value to customers when customers' participation is high, therefore, the following hypotheses are framed and tested at later stage.

H6: CP will moderate the relationship between INTSI and CVC.

H7: CP will moderate the relationship between SPSI and CVC.

Theoretical Framework

To test the hypothesized relationships based on prior literature(Mahmoud et al.,2017; Tha-Ti & Yung, 2018), the framework is proposed and is provided in figure 1. It is proposed that there exists a mediating role of CVC between service innovation and customer retention and a moderating role of customer participation. The impact of age and gender would not be tested in the model rather will be controlled as both of these factors have an implausible effect on innovation perception (Sim & Koi, 2002).

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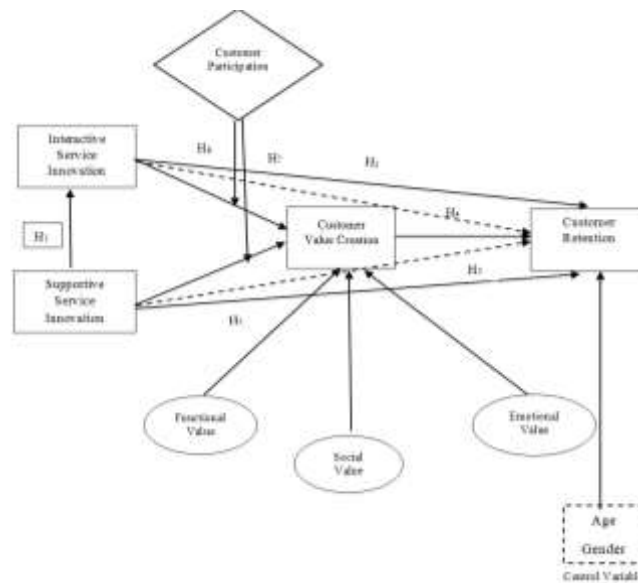
Figure 1: Theoretical Framework

Methodology

To achieve the objectives of this study, a survey was conducted in the first-tier cities of Pakistan. This study follows the positivist philosophy and a deductive approach was used. Data was collected from the mobile phone users. According to the rule of thumb (Hair et al.,2010), the minimum data required for the study was 250. Using the convenient sampling through structured questionnaire 548 usable responses were included in the study. To measure INTSI four items were adoptedfrom the study bySalunke, Weerawardena, and Mccoll-kennedy (2013)which were also used by others e.g. Tha- Ti & Yung (2018). To gauge SPSI, four items were adopted from Salnke, Weerawardena & Mccoll-kennedy (2013). To measure CVC, a scale of nine items was adopted from Mahmoud et al., (2017). The scale of 3 items each for monetary value, emotional value, and social value was adopted from Tha-Ti & Yung (2018). A 5-items scale measuring CR was taken from Chan et al. (2010). Initially, more than 800 questionnaires were sent out to different individuals,and a total of 300 responses were received. Reminders were sent and around 200 more responses were then received. To achieve better results 250 more questionnaires were sent out and as a result a total of nearly 600 responses were received with an approximate response rate of 62%. After careful data screening 548 usable responses were included for data analysis. To analyze the data Smart PLS3 was used and structured equation modeling was performed.

Data Analysis

The demographic profile of the data reveals that female respondents account for 53% while 47% were male respondents. Most respondents were from less than 25-year-old (34%), 32% were between 26-35, 22% were between the age group 36-45, and above 45 were 12% which indicates

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that younger people are more inclined towards innovation. The higher percentage of Ufone (a government-owned mobile service provider) subscribers was observed as 51% while Mobilink (a joint venture of Orascom and Warid Telecom) and Zong (a Chinese origin firm with China Mobile as the parent firm) are 31%. Mobilink and Warid users are reported nearly equal while Telenor (a Norwegian telecommunications firm operating in Pakistan) users are very low i.e. 18%.

Further analysis was conducted in two steps as adopted by many researchers (e.g. Khan, Awan, Fatima, & Javed, 2020; Haq & Awan; 2020). The first step consists of measurement model assessment i.e. to validate the model and the second step is structural model assessment i.e. testing the hypothesized relationships. Common method biases were also tested by evaluating the full collinearity. All variables were regressed against a common variable in this method and no bias from the data from the single source was found. The study yielded a VIF of less than 3.3 therefore single source bias of our data is not a significant problem.

Measurement Model Assessment

To validate the model, measurement model assessment is conducted as a first step in structural equation modeling (SEM) analysis. The reliability and validity of data are established in this step. To test the reliability (a measure of internal consistency of data), Cronbach's alpha and composite reliability were calculated. The acceptable value of Cronbach's alpha is greater than 0.7(Hair et al., 2019) and analysis revealed that all values of constructsare in the acceptable region i.e. > 0.7 proving the reliability of data. The values of composite reliability (CR) of all constructs are above 0.8 which shows good reliable data. The validity of the instrument can be measured through convergent and discriminant validity analysis. Convergent validity was measured through average variance extracted (AVE), the threshold of which is 0.5 (Hair et al., 2019). All values of AVE are greater than 0.5, except CVC indicating that all the items of a single variable are correlated. The values of Cronbach's alpha, CR, and AVE are tabulated in table 1.

Table 1: Reliability of Instruments

	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
CP	0.735	0.834	0.558
CR	0.782	0.873	0.697
CVC	0.861	0.891	0.478
EV	0.731	0.848	0.650
FV	0.705	0.835	0.628
INTSI	0.782	0.859	0.606
SPSI	0.829	0.887	0.664
SV	0.786	0.875	0.700

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation,
EV = Emotional Value, FV = Functional Value, INTSI = Interactive Service Innovation,
SPSI = Supportive Service Innovation, SV = Social Value

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The CVC was measured as a second-order construct as its AVE value is not in an acceptable range and cannot be measured directly. For the reflective-formative model redundancy analysis is conducted to establish reliability and validity. All the dimensions of CVC should have significant weight on CVC as shown in figure 2.
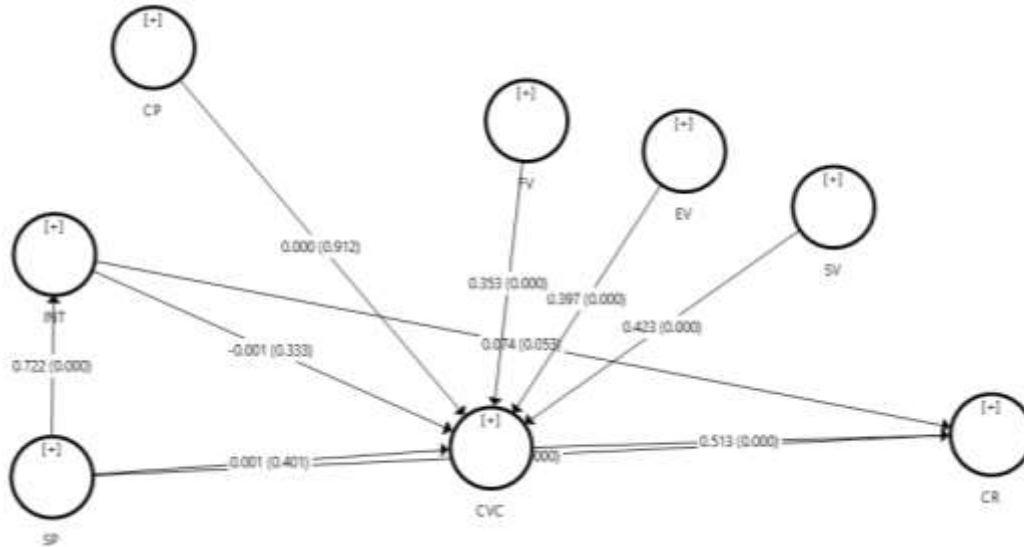
Figure 2:Weights and Significance of CVC

To determine the validity of constructs, traditionally Fornell-Larcker's criterion is used while current literature suggestsusing others(Henseler, Ringle & Sarstedt, 2014). Using SmartPLS3 Hetrotrait-Monotrait (HTMT) ratio of correlation is considered as more reliable. Henseler, Ringle, and Sarstedt, (2015) recommended using this test to measure validity. Its acceptable value is less than 0.9 (more strictly considered as 0.85). The HTMTvalues are shown in table 2 and values of all constructsfall within the acceptable range showing that discriminant validity was established except CVC having greater value. The repeated indicator approach was used to measure the second-order construct, CVC.

Table 2: *Hetrotrait-Monotrait (HTMT) Ratios*

	CP	CR	CVC	EV	FV	INTSI	SPSI	SV
CP								
CR	0.819							
CVC	0.806	0.911						
EV	0.864	0.867	--					
FV	0.779	0.828	--	0.758				
INTSI	0.682	0.729	0.709	0.651	0.681			
SPSI	0.756	0.849	0.827	0.762	0.864	0.88		
SV	0.838	0.806	--	0.877	0.703	0.615	0.655	

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation,
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Structural Model Analysis

As the second step of SEM, a structural model assessment was conducted and the hypothesized relationships were checked based on Hair, Risher, Sarstedt, and Ringle's (2019)'s recommendations. The beta coefficients, t-values, and p-values were analyzed with the 1000-subsample bootstrapping technique proposed by Ramayah, Cheah, Chuah, Ting, & Memon (2018). Further based on Hahn and Ang's (2017) criticism regarding p-values as not a good criterion for evaluating the significance of the hypothesis. It was suggested to use a combination of criteria such as p-values, beta values, t-values, lower level of confidence interval (LLCI), and upper level of confidence interval (ULCI). The summary of the criteria used to test the proposed hypotheses is shown inthe structural model (figure 3). The R-square value shows that SPSI and INTSI predict 61% of customer retention indicating the 61% overall change in the model. Moreover, the results show that SPSI is significantly associated with INTSI (β=0.722, T= 35.179, ρ=0.000) supporting H1. The impact of SPSI and INTSI was found significant with customer retention leading to acceptance of H2 (β=0.080, T= 2.153, ρ=0.016) and H3 (β=0.265, T= 5.982, ρ=0.000).
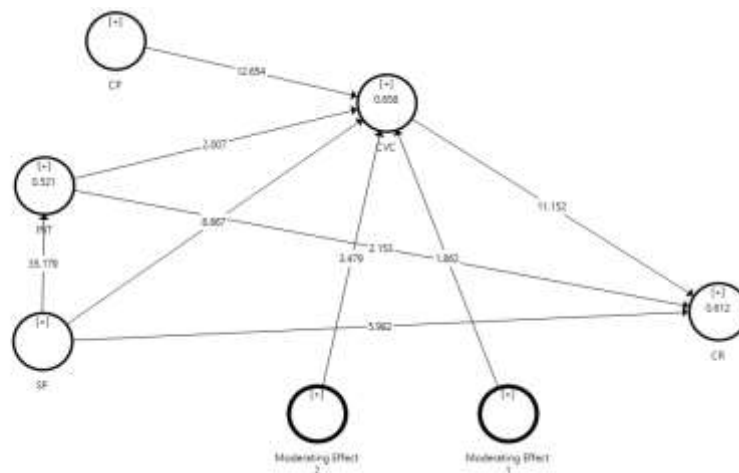
Figure 2: Bootstrap Output

Testing Mediation

The two-stage approach suggested by (Hair et al., 2016) and also used by (Khan, Awan, Fatima & Javed, 2020) was applied to measure CVC as a higher-order construct and its intervening role was measured between INTSI & CS, and SPSI & CR. The results show that CVC plays an intervening role between INTSI (b=0.045, significant at 95%). The indirect effect of SPSI and CR was mediated by CVC significantly (b=0.192, significant at 95%), hence, supporting H4 and H5.

Testing Moderation

The moderating role of CP on the relationship of IVs and MV was checked through a two-stage approach. First, CP was tested as moderator on the relation of INTSI and CVC and second, on the relationship of SPSI and CVC. Path coefficients show that the beta value for interaction term (CP and INTSI) was 0.047, significant at 95% level of the confidence interval, accepting H6 while second interaction term (CP and SPSI) showed different results. The value for coefficient becomes

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negative (b= -0.078), so the relationship between SPSI and CVC was found as insignificant, hence H7 was not supported. The results are tabulated in table 3.

Table 3: Hypotheses Testing.

Hypotheses	Beta	T Statistics	P Values	5.00%	95.00 %	Result
SPSI -> INTSI	0.722	35.179	0.000	0.682	0.75	Supported
INTSI -> CR	0.080	2.153	0.016	0.021	0.142	Supported
SPSI -> CR	0.264	5.982	0.000	0.189	0.332	Supported
INTSI -> CVC -> CR	0.045	1.961	0.025	0.005	0.08	Supported
SPSI -> CVC -> CR	0.192	6.923	0.000	0.148	0.239	Supported
INTSI*CP -> CVC	0.091	1.862	0.031	0.015	0.174	Supported
SPSI*CP -> CVC	-0.151	3.479	0.000	-0.226	-0.085	Not Supported

CP = Customer Participation, CR = Customer Retention, CVC = Customer Value Creation,
EV = Emotional Value, FV = Functional Value, INTSI = Interactive Service Innovation,
SPSI = Supportive Service Innovation, SV = Social Value

Discussion

This study measured the underlying mechanism of service innovation and customer retention through value creation through moderating role of customer participation. Supportive and interactive service innovation was used as criterion variables. The results supported by previous studies indicated that there exists a significant positive relation between supportive and interactive innovation and these both affect consumerretention. The direct relations were accepted and are were found in-line with other researchers (e.g. Tha-Ti & Yung, 2018), while the innovation relationship of supportive and retention of the customers is also the same as previous works (e.g. Tha-Ti & Yung, 2018). The mediating role of customer value creation between interactive innovation and customer support and retention was also measured. The outcomes of this study revealed a significant intervening role of CVC between INTSI and CR, which indicates that interactive innovations create value for customers, and they are more willing to continue using a specific service in the future. This study also strengthens this relation and is supported by the previous study as well (e.g. Mahmoud et al.,2017). The relationship between SPSI and CR is also mediated by CVC and supported by previous scholars suggesting that customer support will help them to retain and also reinforced as reported by Mahmoud et al. (2017). The importance of interactivity and support in innovation leads to enhancing the CVC which in turn supports employee retention.It explains the mediating role of CVC among service innovationand interactive offerings which leads to customer retention. All these outcomes are consistent with previous research (e.g. Mahmoud et al.,2017). It was found that when innovations are designed to support and interact with their customers, value is created by customers whichultimately leads to satisfying customer behavior. As in present time, most of the service provider are using technology-based solutions (e.g. online purchase, mobile apps) for such kind of services support and interaction which increases the customer trust in service providers (Mahmoud et al.,2017).Finally, the moderating role of customer participation was analyzed. The results depicted that customer participation moderates the relationship between interactive service innovation and

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customer value creation as reported by Turel, Serenko & Bontis (2007), while the moderating role of customer participation among the relationship between innovation in support services and creating value for the customer is negative and direct reporting insignificance of the predictive and dependent variable. Customers being involved in the innovation process feel an association with the product that creates value for them (Turel, Serenko & Bontis, 2007; Fatima & Abbas, 2016).

Theimportance of the customer support process and interaction of the firm with its customers is noted in this study. It contributes to the literature on customer retention, value creation, and service innovation. The mediating role of CVC is an important contribution of this study as it empirically highlights the importance of customer support for CVC and the role of participation of customers is signified.

Conclusion

This study tested the relation between service innovation and customer retention through the intervening role of CVC. The outcomes revealed that there exists a significant direct relationship between service innovation (both interactive and supportive) and customer retention. The mediating role of customer value creation was also supported which indicates that through service innovation value is created which ultimately retains customers which means that firms should focus on service innovation. According to the assimilation perspective, any kind of innovation in service innovation. So, companies should focus on creating new innovative ideas and deliver innovative services to retain customers. Further, customer participation plays a significant role in the value creation process. When customers are involved in the innovation process, they feel more connected to the organization and feel support from the firm. When customers actively participate in the innovation process, they find that firm is directly involving them in the innovation process which ultimately creates value for customers.

This study highlights the importance of value creation for retaining employees in the service industry. The role of customer participation was also discussed, and it is suggested that value creation is increased when customers are involved, adding in the existing literature of the service domain. It helps to understand the service provider to focus on the interactive and supportive side of service and to retain the customers. Finally, this study provides empirical evidence for marketers and helps to understand the phenomenon more clearly.

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Credit Channel of Monetary Transmission Mechanism: New Insight from SVAR-DAG Approach

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Abstract

The credit channel of monetary transmission mechanism gains significant importance after global financial crises. The present study has investigated the credit channel for an emerging economy of Pakistan, which has an underdeveloped financial sector. The study has collected monthly data from June 2006 to June 2018 on credit to the private sector (CPRVS), interest rate, money supply, price level, and industrial production index. The study has contributed to the empirical literature by investigating the contemporaneous causal relationships among the variables. Further, the study has investigated the effectiveness of the credit channel of the monetary transmission mechanism. The study has employed the SVAR model along with direct acyclic graphs (DAG) to identify the covariance matrix.The study notes that the credit channel is ineffective in Pakistan, and it does not contemporaneously cause economic growth (EG).Further, EG causes credit supply to the private sector. Hence, when the economy grows, the financial sector develops, and commercial banks extend more credit to the private sector. The study also notes that the interest rate has no contemporaneous impact on the CPRVS. Moreover, for robustness check, we have estimated two SVAR models, one with a real discount rate as a measure of interest rate and the other is with the real lending rate, as it is more related to the credit supply. However, both proxies give the same results, which implies that our findings are robust. Hence, we can conclude that the credit channel is ineffective in Pakistan.
Key Words: Credit Channel, Direct Acyclic Graphs, Monetary policy, SVAR,
JEL Classification: C30, E40, E52, E58

Introduction

Global Financial Crises (GFC) of 2008 is the most critical event in the history of macroeconomics. It helps reshape macroeconomics and MP by looking at the new challenges that the world has been facing. It has raised several questions on modern macroeconomics and highlights the weakness within the old paradigm. For instance, the advanced texts in macroeconomic like Romar (2012) do not feature money and banks in their analysis, which is an integral part of recent economies. The financial activities were relatively unimportant in the economic discussions, and banks are

considered intermediaries between buyers and sellers in the Dynamic Stochastic General Equilibrium (DSGE) models. For this reason, DSGE models could not read the pace and direction of the GFC. However, it is now widely believed that the GFC is, in fact, the banking crisis.

Bernanke and Gertler (1995) note that the traditional monetary and interest rate channels (IRC) do not capture all aspects of the real economy. On the other hand, the credit channel (CRC) better explains the transmission mechanism of monetary policy (TMMP) under information asymmetry. According to the credit channel, MP influences interest rate (the price of money) and credit (quantity of money) and hence loans demand.

CRC works through the *external finance premium (EFP).* EFP shows market imperfections. The difference between the cost that banks faced when it generates funds internally and raised funds externally. When CB raises the interest rate, it increases EFP. As a result, it affects the cost of borrowing, real spending, and hence economic activity. Why the change in interest rate affect EFP? Two channels are discussed in the literature. First is the balance sheet channel (BSC), and second is the bank lending channel (BLC). BSC works through the balance sheets of borrowers, such as the impact of MP on their cash flows, net worth, and liquid assets.

In contrast, BLC focuses on the impact of MP on the supply of loans. BLC is more relevant for developing countries that face resource constraints, so any policy change directly affects borrowers. BLC assumes that the borrowers are resource constraint and can only finance their projects through borrowing. Hence, when CB changes policy, it influences bank loans supply, and thus investment and EG (Oliner & Rudebusch, 1996)

Similarly, the effectiveness of MTM is less explored in Pakistan. Further, there is no unanimous agreement on the channels through which MP affects the economy's real sector (Shaheen, 2020). Some studies have observed that IRC is effective (Agha et al., 2005; Munir & Qayyum, 2014), while other noticed price puzzle[9](Agha et al., 2005; Javid & Munir, 2010; Rashid & Jehan, 2014; Shaheen, 2020). Similarly,Hussain (2009) argues that the exchange rate channel is more effective in Pakistan than other channels. On the other hand, Agha et al. (2005); Chaudhry et al. (2012); Mukhtar and Younas (2019) observes that CRC is effective in Pakistan, whereasBaig (2011); Hussain (2014); Imran and Nishat (2013)argue that CRC is ineffective in Pakistan.Shaheen (2020) notice that broad money effectively enhances economic activity in the long run. In contrast, the reverse repo rate plays a significant role in controlling inflation in the long run and accelerating EG in the short run. Hence, there is still a debate in the literature about how MP affects the real sector of the economy.

The present study has contributed to resolving this controversy by employing the standard technique structural vector autoregressive (SVAR) model. Interestingly, the one possible reason for the differences in the literature is the use of different estimation methods. Even the studies that have employed the SVAR model couldn't reach the same conclusion. One of the possible reasons is the

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[9]It is generally believed that tight MP (increase in interest rate) lowers inflation rate. However, when tight MP surge inflationary pressures in an economy this phenomenon is known as price puzzle.

differences in the identification restrictions imposed on the AB matrix. Traditionally, researchers either use Cholesky decomposition or economic theory to identify the covariance matrix. However, Cholesky decomposition is based on the whole idea, whereas the economic theory is relatively weak in causal relationships(Mizon, 1995). Usually, economists consider correlation as causation, which is not true.

For the effectiveness of MP, policymakers should understand the causal relationships among the policy variables and the response variables. Directed Acyclic Graphs (DAG) are extensively used in other disciplines, but economists rarely use them. Hence, by following Awokuse and Bessler (2003); Céspedes et al. (2008); Céspedes et al. (2015); Moneta (2004), we have used DAGs to identify the covariance matrix of SVAR. DAG is used to understand causal relationships based on conditional dependence.

Hence, the objectives of the present study are to investigate:
(i)   the contemporaneous causal relationship among the policy variable and the response variables i.e., credit to the private sector (CPRVS),interest rate, economic growth (EG), inflation rate, and money supply,
(ii)   the effectiveness of the CRC of MTM

The more specifically present study has investigated the impact of unanticipated interest rate shock on CPRVS. Moreover, how the output responds to the unanticipated increase in the CPRVS. The investigation of the effectiveness of the CRC helps the policymakers in different ways. Firstly, it helps to understand the contemporaneous causal relationship between the policy variable and the real variables. Secondly, it provides empirical evidence to understand the impact of MP in the real economy. Thirdly, it helps in assessing the role of banks in the modern financial era. Bernanke and Blinder (1992)note that loans, EG, unemployment, and other macroeconomic indicators are strongly correlated. If there are constraints on bank lending capacity, then it negatively affects investment and hence economic growth. However, the present study notes that CRC is ineffective in Pakistan. Further, the study note that the interest rate has no contemporaneous effects on CPRVS. It implies that there exist lags in transmitting the impact of policy. Secondly, the study notes that economic growth contemporaneously causes CPRVS, and CPRVS does not cause EG. It suggests serious policy implications for the SBP.

The present study is organized as follows. In section two, we have reviewed the empirical literature. In section three, model specifications, variables, and data sources are discussed. In section four, we have presented the estimation results. Discussion and policy implications are carried out in the section five, and the section six concludes the study.

Literature Review

Banks play an essential role in the MTM through interest rates and CRCs. The proponents of the bank lending channel assert that it helps in smoothing the fluctuations in output by affecting

investment and consumer spending (Bernanke & Gertler, 1995). It is well documented in the literature that bank loans play an essential role in diverging the impact of MTM. The CPRVS helps in achieving economic development and stability. However, it is also true that most of the financial crises are due to abnormal fluctuations in credit. For instance, Japan and Scandinavia's financial crises in the early 1990s, Southeast Asian crises in 1997-98 are due to excessive foreign and domestic credit (Kaminsky & Reinhart, 1999).

A considerable amount of work has been done so far in advanced and emerging economies on the credit channel of MTM. However, empirical studies find mixed results. For instance, Bernanke and Blinder (1992) observe that CRC is effective by using the Granger causality test (GCT) and vector autoregressive (VAR) model. Similarly, Kashyap et al. (1996) note that tight MP affects firms' external financing. Hence decreases loan supply and shrinks investment activities. Lown et al. (2000) has used the VAR approach and observe that bank lending standards significantly affect loan supply and real output, and conclude that BLC is central to the MTM. Ekimova et al. (2017) observe that the policy rate effectively accelerates credit growth before GFC. However, it is ineffective after GFC. Further, the study notes that unconventional MP is more effective after GFC.

Traditionally, the central banks have monopoly power over the creation of the money supply (MS). The central bank increases MS or decreases MS to affect output and prices. Nowadays, MS is no more exogenous and in complete control of central banks. In advanced countries like England, 97% of MS is created by commercial banks. Similarly, SBP is no more targeting M2. The key policy variable is the policy rate, which SBP uses to control inflation and the real sectors of the economy.

The interest rate channel works well in a perfectly competitive environment. However, unfortunately, poor and developing economies have imperfect financial markets. In this scenario, the price and quantity of credit is an important policy tool (Kamin, 1997). However, the CRC is not independent. It enhances the IRC's impact on the economy (Bernanke & Gertler, 1995) through the external finance premium (EFP). EFP is the difference between internally and externally raised funds. The central bank can influence EFP through the bank lending channel (BLC) and the balance sheet channel (BSC) (Bernanke & Gertler, 1995). Bernanke and Gertler (1995) argue that BLC's focus is the impact of MP on the supply of bank lending. BLC is originated in the loanable fund theory and is the extension of the IS-LM model (Blinder & Stiglitz, 1983).

In Pakistan, MTMs are less explored in the literature. Moreover, whether MTM is effective in Pakistan is still inconclusive. Further, the channel through which MP affects the real sector of the economy is still under debate. Some studies observe that CRC (measure as a credit to the private sector) is effective in Pakistan in accelerating EG (Agha et al., 2005; Chaudhry et al., 2012; Mukhtar & Younas, 2019). In contrast, others observe that CRC is ineffective in Pakistan (Baig, 2011; Hussain, 2014).

Agha et al. (2005) examine the MTM in Pakistan by using the VAR model. The study has used data from 1996 to 2004 and observe that the bank lending channel is the most effective in Pakistan. Similarly, Alam and Waheed (2006) have employed the VAR model and argue that MP has real effects in the short run by using quarterly data from 1973 to 2003. The study notes that tight MP is more visible in the sectors with more reliance on bank loans. On the other hand, Hussain et al. (2009)

note that the exchange rate channel effectively controls inflation and accelerates output than IRC and CRC. Javid and Munir (2010) have employed the SVAR model and note that tight MP leads to inflationary pressures in Pakistan. Further, the study notes that the contractionary MP initially accelerates output, which declines later on. Aftab et al. (2016) observe that a high-interest rate decreases CPRVS in the short-run and the long-run. The study has employed the ARDL model and used data from 1975-2011.

Mukhtar and Younas (2019) have observed that CRC effectively stimulates output and controls inflation in Pakistan. Similarly, Munir (2020) has used the FAVAR model to investigate the effectiveness of MP on money and credit. The study notes that the contractionary MP (increase in interest rate) has no significant impact on money (M0 and M1). However, it significantly decreases M2. Similarly, the positive interest rate shock significantly reduces CPRVS more than credit to the government sector and M2. Munir (2020) argues that the tight MP adversely affects CPRVS. It can be used as a tool to affect AD.

On the other hand, there are some studies which note that CRC is not effective in Pakistan. For instance, Imran and Nishat (2013) note that domestic deposits, EG, exchangerate, foreign liabilities, and monetary conditions are associated with CPRVS in Pakistan. In contrast, the inflation rate and interest rate are not associated with CPRVS. The study has employed the ARDL model using data from 1971 to 2010. Hence, there exists an exchange rate and price puzzle. However, Munir and Qayyum (2014) have used the FAVAR model and note that the tight MP plays a significant role in controlling inflation. Moreover, the study notes that the MP affects output in the short run, whereas it affects inflation and money in the long run.

Similarly, Hussain (2014) has investigated the effectiveness of IRC and CRC of MTM by using quarterly data from 1991 to 2012 and employed Variance decomposition and IRF and observe that both channels are ineffective in Pakistan. Further, the study has divided the sample into two parts, the first sample covers data from 1991 to 2000, and the second sample covers data from 2001 to 2012. The study notes that in the first sample, CRC is effective, while in the second sample, IRC effectively transmits the effects of MP to the economy. Hence, CRC is no more effective in Pakistan.Khan et al. (2016) note that a low policy rate couldn't increase CPRVS in Pakistan. Commercial banks are less willing to lend to the private sector. Hence the excessive government borrowing weakens the MTM

Similarly, Cheema and Naeem (2019) note that the CRC is not providing any additional leverage to the monetary authorities for conducting MP in Pakistan. The study has used monthly data from 2002-2012 and employed ARDL bound testing cointegration and ECM.

Hence, from the review of the literature, it is evident that the literature is inconclusive about the effectiveness of CRC. Hence to resolve this controversy, the present study has contributed to the empirical literature by investigating the effectiveness of CRC of MTM.

1. Model Specification and Variables

FollowingSims (1980), we have used the SVAR model, which can be represented as:

$$A_0 Y_t = A(L)Y_{t-1} + E_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.. (1)$$

It is the nx1 vector of contemporaneous variables, wherediagonals contain ones and off-diagonals have non-zero elements. A(L) is lag operator polynomial, Et is the vector of error terms independent and identically distributed, and$E(EE')$ is diagonal. Moreover, Ao is a full-rank nxn matrix that shows causal relationships among variables. To identify this system n(n-1)/2 restrictions are imposed on the Ao matrix.

As in the empirical review of literature, we have observed that different studies lead to different conclusions, even using the same set of variables. The one possible reason is different identification restrictions imposed on the matrix structure, leading to different SVAR models, which may differ from the data generating process. To get the true causal relationship among the variables based on conditional independence, the graph-theoretic (GT) approach gains considerable attention in the mid of 1980s (Lauritzen, 2001; Pearl, 2000; Spirtes et al., 2000).However, these techniques have been extensively used in other fields, rare in the economic discipline (Céspedes et al., 2015).

In the GT approach, arrows are used to connect causal variables to their effects, which imply certain conditional independence or dependence among the variables. Moreover, we can represent the graph of the data generating process by imposing restrictions on the Ao matrix. To understand the GT approach, suppose we have three variables X, Y, and Z, where X and Y are dependent, but conditional on Y, it is independent. However, the intermediate variable Y can have a different role. For instance, If X→ Y→ Z (X causes Y causes Z) or X←Y←Z, in both cases, Y screen X from Z. Similarly, if X ←Y→ Z, then Y is the common cause of Z and X.

On the other hand, X and Y are independent, conditional on a set of variables that exclude Z or its descendant, if none of the variables that cause X or Y directly cause Z, i.e., X → Z ← Y. Hence conditional on Z, X and Y are dependent. Here Z is the unshielded collider on the path XZY[10]. In the GT approach, we have used directed acyclic graphs (DAG). It implies that if X→ Y→ Z, then it is not possible that Z→ X.

Conditional independence is based on the idea of d-separation presented by Pearl (1995). It states that Z d-separate X from Y (X⊥Y|Z)G, if and only if Z blocks every path from a vertex in X to a vertex in Y. Spirtes et al. (1993) have built a PC algorithm in TETRAD to incorporate the notion of d-separation to build DAG. PC algorithm starts with an unrestricted set of relationships among variables. Later on, it removes edges between variables based on zero or partial conditional correlations. Awokuse and Bessler (2003) argue that the DAG analysis's identification restrictions may yield theoretically consistent IRFs that can play anessential role in policy analysis.

The reduced form equation for model 1 is

$$X_{1t} = [LIPI\ LINF\ LCPRVS\ LM2\ RDR]' \qquad\qquad (2)$$

---

[10]On the other hand, shielded collider has direct link between X and Y.

LIPI is the log of industrial production index, LINF is the inflation rate, measured as the annual change in the log of CPI. LCPRVS is the log of credit to the private sector. It includes both credits, i.e., credit extended to the firms and HH. Similarly, LM2 is the log of broad money supply, and RDR is the real discount rate used to measure the policy rate. The real discount rate is calculated by subtracting the inflation rate from the nominal discount rate.

Further, we have re-estimated the same model using the real lending rate (RLR) as commercial banks give loans on the lending rate. So, in this case, the reduced form equation becomes

$$X_{2t} = [LIPI\ LINF\ LCPRVS\ LM2\ RLR]' \qquad (3)$$

We have collected data from June 2006 to June 2018 by using various national and international sources. For LIPI, we have collected data from Ejaz and Iqbal (2019). Previous studies rely on the large-scale manufacturing index as a proxy of the industrial production index. The data on RLR, LM2, and CPRVS have been collected from the SBP website. Moreover, the data on RDR is collected from IFS, and LINF is collected from PBS and SBP website. We have used Eviews 10 software to estimate the SVAR model and TETRAD V for DAG analysis.

Estimation Results

The present study has used monthly data from June 2006 to June 2018 and expressed all variables in the log form except interest rates. Further, we have introduced eleven seasonal dummies to capture the effect of seasonality. In addition to this, two dummies are also included to capture the oil price shocks of 2008 and 2016.

To check the stationary properties of all variables, we have employed ADF and PP unit root tests. The unit root result shows that all variables are the first difference stationary I(1) as shown in Table 4. It the necessary condition to proceed with the non-recursive SVAR model.

Table 4: Result of Unit Root Test

Variable	Level		First Difference		Order of Integration	
	ADF	PP	ADF	PP	ADF	PP
LIPI	0.92 (0.99)	-2.1 (0.30)	-4.88 (0.00)	-26 (0.00)	I (1)	I (1)
LINF	-1.67 (0.45)	-1.5 (0.50)	-10.1 (0.00)	-10 (0.00)	I (1)	I (1)
LM2	-0.97 (0.76)	-0.5 (0.90)	-4.79 (0.00)	-33.1 (0.00)	I (1)	I (1)
LCPRVS	1.23 (0.99)	-1 (0.94)	-6.46 (0.00)	-8.85 (0.00)	I (1)	I (1)
RDR	-1.68 (0.44)	-3.1 (0.10)	-6.47 (0.00)	-11.4 (0.00)	I (1)	I (1)
RLR	-1.47 (0.55)	-2.5 (0.10)	-6.92 (0.00)	-9.8 (0.00)	I (1)	I (1)

Note: P- values are available in the parenthesis

Next, to estimate the unrestricted VAR model and decides the lag length. Different criterion suggests different lag lengths for both models, as shown in

Table 5. SC and HQ indicate that we should include one lag, FPE suggests three lags, LR offers five lags, and AIC suggests six lags.

Table 5: Lag Order Selection Criteria

Model 1					
Lag	LR	FPE	AIC	SC	HQ
0	NA	0.00	-6.15	-4.46	-5.46
1	1058.10	0.00	-14.84	-12.61*	-13.93*
2	46.70	0.00	-14.89	-12.13	-13.77
3	52.79	2.14e-13*	-15.02	-11.73	-13.68
4	32.38	0.00	-14.98	-11.16	-13.42
5	40.29*	0.00	-15.03	-10.68	-13.26
6	33.46	0.00	-15.03*	-10.15	-13.05
7	17.53	0.00	-14.87	-9.46	-12.67
Model 2					
Lag	LR	FPE	AIC	SC	HQ
0	NA	0.00	-6.32	-4.59	-5.62
1	1013.69	0.00	-14.92	-12.65*	-13.00*
2	51.08	0.00	-15.02	-12.21	-13.88
3	55.91	1.81e-13*	-15.19	-11.84	-13.83

4	28.43	0.00	-15.11	-11.22	-13.53
5	38.38*	0.00	-15.15	-10.71	-13.35
6	36.76	0.00	-15.19*	-10.22	-13.17
7	17.14	0.00	-15.03	-9.51	-12.78

Note: * indicates lag order selected by the criterion

     LR: sequential modified LR test statistic (each test at 5% level)

    FPE: Final prediction error

    AIC: Akaike information criterion

    SC: Schwarz information criterion

    HQ: Hannan-Quinn information criterion

All diagnostics are satisfied with six lags; residuals are normally distributed with no heteroskedasticity and autocorrelation, as shown in

Table 6 and Table 7.

Table 6: VAR Residual Normality and Heteroskedasticity test

	Model 1	**Model 2**
Normality Test		
Skewness	11.46 (0.06)	7.97 (0.16)
Kurtosis	3.98 (0.55)	3.60 (0.61)
Jarque-Bera	15.45 (0.12)	11.57 (0.31)
Heteroskedasticity Test		
	1180.62 (0.20)	1167.35 (0.28)

Table 7: VAR Residual Serial Correlation LM Tests

	Model 1		**Model 2**	
Lags	**LM-Stat**	**Prob**	**LM-Stat**	**Prob**
1	34.66	0.09	31.83	0.16
2	34.01	0.11	27.24	0.34
3	23.92	0.52	23.89	0.53
4	21.18	0.68	17.92	0.85
5	13.79	0.97	19.25	0.79
6	25.93	0.41	25.48	0.44

Moreover, the estimated models are stable; all roots are less than one, as shown in

Table 8: VAR Stability Condition

Model 1		Model 2	
Root	**Modulus**	**Root**	**Modulus**
0.989524	0.989524	0.987191	0.987191
0.963186	0.963186	0.965017	0.965017
0.914617 - 0.205225i	0.937358	0.901774 - 0.201828i	0.924084
0.914617 + 0.205225i	0.937358	0.901774 + 0.201828i	0.924084
0.790733 - 0.410693i	0.891026	0.788591 - 0.412444i	0.889936
0.790733 + 0.410693i	0.891026	0.788591 + 0.412444i	0.889936
-0.429207 + 0.774534i	0.885506	-0.428071 + 0.770797i	0.881687
-0.429207 - 0.774534i	0.885506	-0.428071 - 0.770797i	0.881687
0.674972 + 0.535115i	0.861357	0.674877 - 0.537572i	0.862811
0.674972 - 0.535115i	0.861357	0.674877 + 0.537572i	0.862811
0.820637	0.820637	0.239311 + 0.796300i	0.831483
0.524349 - 0.630745i	0.820233	0.239311 - 0.796300i	0.831483
0.524349 + 0.630745i	0.820233	0.541183 - 0.630499i	0.830908
0.212688 - 0.779059i	0.80757	0.541183 + 0.630499i	0.830908
0.212688 + 0.779059i	0.80757	0.820064	0.820064
-0.169306 + 0.773009i	0.791333	-0.195241 - 0.781084i	0.805115
-0.169306 - 0.773009i	0.791333	-0.195241 + 0.781084i	0.805115
-0.541866 + 0.526408i	0.755463	-0.527056 - 0.569789i	0.776175
-0.541866 - 0.526408i	0.755463	-0.527056 + 0.569789i	0.776175
-0.740129 - 0.029358i	0.740711	-0.72089	0.720886
-0.740129 + 0.029358i	0.740711	-0.497153 - 0.462783i	0.679212
-0.019373 - 0.722072i	0.722332	-0.497153 + 0.462783i	0.679212
-0.019373 + 0.722072i	0.722332	-0.674521 - 0.046703i	0.676136
-0.6485	0.648497	-0.674521 + 0.046703i	0.676136
-0.448880 - 0.464625i	0.646042	-0.017972 + 0.663691i	0.663934
-0.448880 + 0.464625i	0.646042	-0.017972 - 0.663691i	0.663934
0.62577	0.62577	0.646539	0.646539
-0.177923 + 0.456705i	0.490139	-0.125577 - 0.564086i	0.577895
-0.177923 - 0.456705i	0.490139	-0.125577 + 0.564086i	0.577895
0.193959	0.193959	0.249091	0.249091

Note: No root lies outside the unit circle.

Since all the variables are I(1), however, it is possible to use VAR in levels even with the I(1) series (Aslanidi, 2007; Kim & Roubini, 2000) to save the useful information available in the data. Hence, we have an estimated VAR in level. Further, to confirm the long-run relationship among the variables, we have employed the Johansen Cointegration (JC) test, which ensures that the long-run relationship exists among the variables. The result of the JC test is reported in

Table 9.

The trace and maximum eigenvalue test indicate that four cointegrating equations exist for model 1. Whereas for model 2, the trace test indicates that four cointegrating equations exist. In contrast, the maximum eigenvalue test shows that one cointegrating equation exists at a 0.05 level of significance. Hence overall, we can conclude that there exists a long-run relationship among the variables. So, we can estimate VAR in levels with the I (1) series.

Table 9: Results of Johansen Cointegration Test

Model 1							
No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
r=0	0.317	121.172	69.819	0.000	52.709	33.877	0.000
r≤1	0.190	68.463	47.856	0.000	29.163	27.584	0.031
r≤2	0.153	39.300	29.797	0.003	22.876	21.132	0.028
r≤3	0.112	16.424	15.495	0.036	16.401	14.265	0.023
r≤4	0.000	0.022	3.841	0.882	0.022	3.841	0.882
Model 2							
No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
r=0	0.312	117.416	69.819	0.000	51.513	33.877	0.000
r≤1	0.175	65.903	47.856	0.000	26.546	27.584	0.067
r≤2	0.157	39.357	29.797	0.003	23.631	21.132	0.022
r≤3	0.108	15.726	15.495	0.046	15.725	14.265	0.029
r≤4	0.000	0.001	3.841	0.971	0.001	3.841	0.971

Note: Trace test indicates four cointegrating eqn(s) exists in both models, and the Max-Eigen test indicates four cointegrating eqn(s) exists for model 1A, and 1 cointegrating eqn exists for Model 1B at the 0.05 level

 *MacKinnon et al. (1999) p-values

Contemporaneous Causal Relationship

We have used the DAG analysis to investigate the causal relationship between the variables and identify the SVAR model. DAG starts with an undirected graph and connects all variables, as depicted in Figure 3**Error! Reference source not found.**

Model 1   Model 2
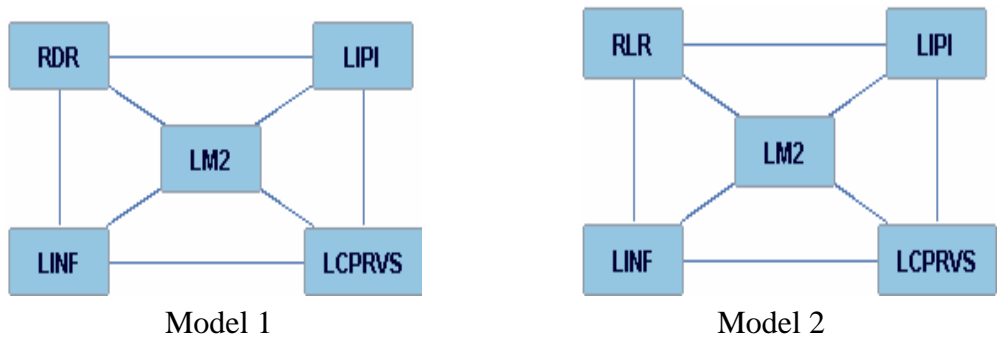
Figure 3: Undirected Graph: Model 1& 2

PC algorithm is used to remove edges based on conditional correlation. Finally, we get the following pattern, as shown in Graphs Figure. The DAG analysis for both models shows that interest rate causes inflation, and LIPI causes LCPRVS. Hence, when output increases, demand for credit also increases. Moreover, DAG analysis also suggests that none of the variables contemporaneously cause interest rate. This assumption is justified as the policymakers don't have complete information about output and prices within the same month. It is available with a lag (Alam, 2015; Cushman & Zha, 1995; Jones & Bowman, 2019; Kim & Roubini, 2000). Also, there is no direct contemporaneous causality running from   RDR (RLR) to EG.
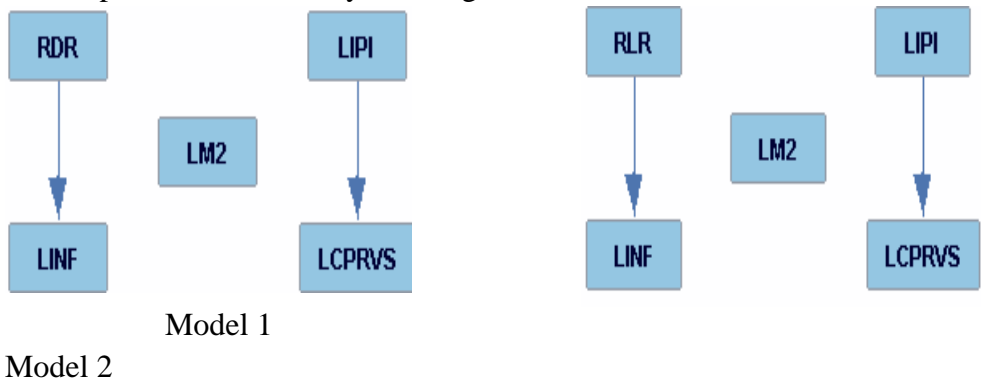
Model 1

Model 2

Figure 4 Direct Acyclic Graphs

The results of models 1 and 2 are summarized in equations 4 and 5.

$$B_1 Y_t = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & \beta_{25} \\ \beta_{31} & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} LIPI \\ LINF \\ LCPRVS \\ LM2 \\ RDR \end{bmatrix} \qquad (4)$$

$$B_2 Y_t = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & \beta_{25} \\ \beta_{31} & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} LIPI \\ LINF \\ LCPRVS \\ LM2 \\ RLR \end{bmatrix} \qquad (5)$$

We have used the identification restrictions proposed by the DAG analysis and estimate the over-identified SVAR model. The log-likelihood ratio test is available in

Table **10**, which shows that overidentifying restrictions are not rejected at a 10% level of significance for both models.

Table 10: LR test for Over-identification of Model 1 &2

	Log-likelihood	Chi-square	Probability
Model 1	1133.712	5.507	0.702
Model 2	1147.182	5.515	0.701

Hence restrictions proposed by the DAG are consistent with the data. We have constructed structural impulse response functions (SIRF) and forecast variance decomposition (FVD) for dynamic analysis.

Structural Impulse Response Function

The SIRFs are used to observe domestic macroeconomic variables' response to one SD exogenous shock to the system's policy variables. We have also reported 95% confidence bands of the standard errors to see the response's significance. The study has estimated two models; the first model considers RDR as a measure of interest rate and the second model considers RLR as a measure of the interest rate. SIRF of model 1 is reported in the first panel, and model 2 is reported in the second panel of Figure 5
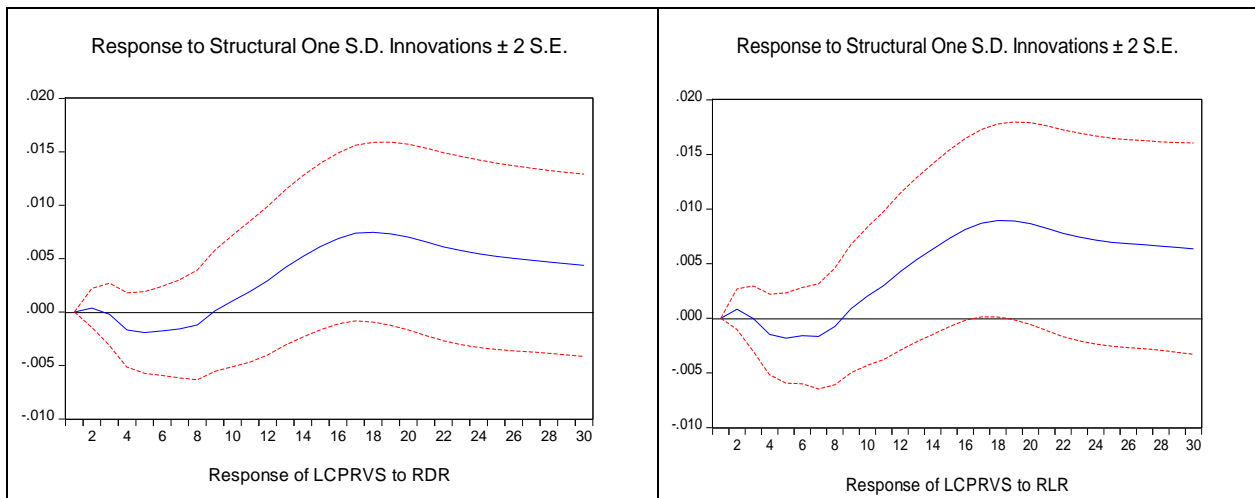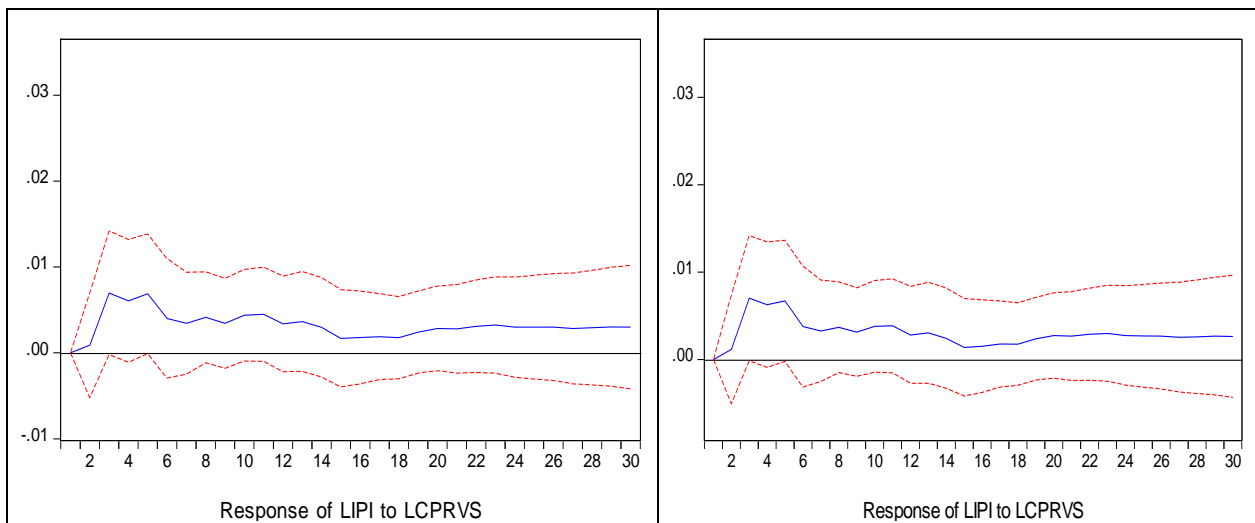
Figure 5: *Structural Impulse Response Functions of interest rate and credit shocks*

In response to unanticipated tight MP (increase in RDR), CPRVS respond after three periods. Initially, it decreases, and after eight months, it starts rising. However, the results are insignificant. The almost same pattern has been observed when we consider RLR. This implies that CPRVS does not significantly respond to interest rate movement.

Similarly, in response to the positive shock to LCPRVS, LIPI increases, but the results are insignificant. Hence, the CRC is ineffective. Our results are consistent with Baig (2011); Hussain (2014); Imran and Nishat (2013), who also observes that the CRC is not useful in Pakistan

Forecast Variance Decomposition

The FVD of model 1 and model 2 are reported in
Table **11**.
Similarly, Model 2 also depicts the same behavior. The main chunk of the variation in LIPI is explained by itself. In the first period, a 100% variation in LIPI is explained by itself. However, in the last period, 65% of the variation in LIPI is explained by itself. In contrast, LCPRVS explains 12% of the variation, RLR explains 13% of the variation, LINF explains 8% of the variation, and LM2 explains 2% of the variation. Hence in both models, the significant portion of the variation in LIPI is defined by itself. It also implies that some other factors affect output besides credit, interest rate, MS, and interest rate.

Table 12, respectively. In Model 1, the FVD of LIPI shows that a 100% variation in LIPI is explained by itself in the first period. However, in the fifth period, LIPI explains 90% of the variation, and LCPRVS explains almost 8% of the variation. In contrast, the remaining variation is elucidated by the other variables. Later on, over the horizon, the share of other variables increases a bit, and the share of LIPI decreases in explaining the variation in LIPI. However, still, the main chunk of variation in LIPI is explained by itself. In the last period, 64% of the variation in LIPI is explained by itself, LINF explains almost 11% of the variation, the LCPRVS explains 14%, the LM2

explains 2%, and the RDR shock explains 9%. Thus, the main chunk of variation in LIPI is explained by itself, whereas the other variables explain only minor variation.

Table 11: Forecast Variance Decomposition of Model 1

Period	LIPI Shock	LINF Shock	LCPRVS Shock	LM2 Shock	RDR Shock
Variance Decomposition of LIPI:					
1	100.000	0.000	0.000	0.000	0.000
2	99.392	0.004	0.060	0.408	0.136
5	90.025	0.344	8.392	0.809	0.430
10	75.076	4.005	10.561	2.137	8.221
15	70.552	5.839	11.431	2.042	10.136
20	67.747	8.595	11.871	2.085	9.702
25	65.280	10.594	12.970	1.976	9.178
30	64.224	11.168	13.873	1.887	8.848
Variance Decomposition of LCPRVS:					
1	3.597	0.000	96.403	0.000	0.000
2	10.562	6.E-06	89.074	0.299	0.065
5	22.686	0.194	74.634	1.425	1.061
10	51.504	0.083	46.380	1.091	0.942
15	48.657	0.872	45.213	1.568	3.690
20	48.185	3.007	39.916	1.222	7.670
25	46.905	5.898	37.906	0.920	8.371
30	44.814	9.425	36.948	0.737	8.076

Similarly, Model 2 also depicts the same behavior. The main chunk of the variation in LIPI is explained by itself. In the first period, a 100% variation in LIPI is explained by itself. However, in the last period, 65% of the variation in LIPI is explained by itself. In contrast, LCPRVS explains 12% of the variation, RLR explains 13% of the variation, LINF explains 8% of the variation, and LM2 explains 2% of the variation. Hence in both models, the significant portion of the variation in LIPI is defined by itself. It also implies that some other factors affect output besides credit, interest rate, MS, and interest rate.

Table 12: Forecast Variance Decomposition of Model 2

Period	LIPI Shock	LINF Shock	LCPRVS Shock	LM2 Shock	RLR Shock
Variance Decomposition of LIPI:					
1	100.000	0.000	0.000	0.000	0.000
2	99.044	0.122	0.098	0.347	0.390
5	89.867	0.243	8.415	0.662	0.812

10	74.796	2.645	9.832	2.417	10.310
15	70.300	3.707	10.017	2.175	13.801
20	67.628	6.285	10.459	2.188	13.440
25	65.583	7.851	11.471	2.090	13.005
30	64.725	8.250	12.237	2.009	12.779
Variance Decomposition of LCPRVS:					
1	3.2428	0.000	96.757	0.000	0.000
2	10.652	0.346	88.453	0.218	0.330
5	22.011	0.574	75.043	1.376	0.997
10	49.861	0.454	47.545	1.057	1.082
15	47.949	0.457	44.384	1.608	5.601
20	47.8777	1.428	38.058	1.296	11.340
25	46.684	3.524	35.806	1.006	12.979
30	44.874	6.152	34.904	0.820	13.251

The FVD of LCPRVS in Model 1 shows that 96% of the variation in LCPRVS is explained by itself, whereas the LIPI defines the remaining 4% variation. However, over time the share of LIPI increased. In the 10th period, LIPI explains almost 52% of the variation, and LCPRVS explains 46% of the variation, whereas RDR explains nearly 4% of the variation. LINF explains less than 1% of the variation, and LM2 illustrates 2% variation. Similarly, in the 30th period, LIPI explains 45% of the variation, and LCPRVS explains 37% of the variation. On the other hand, LINF explains 9% of the variation, and RDR explains 8% of the variation. Moreover, LM2 explains less than 1% of the variation.

Likewise, Model 2 also shows that 97% of the variation in LCPRVS is explained by itself, and the LIPI explains the remaining 3%. Over time, LIPI shock's role in defining the variation in LCPRVS increases, and the share of LCPRVS decreases. In the 30th period, almost 45% of the variation in LCPRVS is explained by LIPI. Whereas LCPRVS explains 35% of the variation, RLR shock explains 13% of the variation, LINF explains 6% of the variation, and LM2 explains less than 1 % of the variation. Hence, we can conclude that the LIPI and LCPRVS explain the major chunk of variation in LCPRVS.

Discussion and Conclusion

The present study has reinvestigated the effectiveness of the CRC of MTM. The study has provided a novel contribution to the empirical literature by using DAG analysis to understand the causal relationship between the policy and the response variables. Further, the study has used the newly estimated data on the industrial production index (IPI), which was not available and used before in the empirical inquiry.

Stable prices and the increase in economic activities are the main goals of MP. To achieve these objectives, SBP formulates MP. Hence, it is the central concern of the policymakers to understand the MTM. After the GFC, CRC of MTM gains significant importance. It is considered the main cause of the financial crisis. In Pakistan, CRC is less explored, and its significance is inconclusive. The present study has investigated the contemporaneous causal relationship among the policy variables and the response variables to bridge the gap. Secondly, we have investigated the effectiveness of CRC of MTM by using monthly data from June 2006 to June 2018.

The study notes that the interest rate contemporaneously causes inflation. This implies that interest rates instantaneously affect inflation. Secondly, economic growth contemporaneously causes credit to the private sector. Hence, when the economy grows, the demand for credit from the private sector increases, and more credit is extended to the private sector. Further, the study notes that any variable in the system does not contemporaneously cause interest rate. Moreover, the interest rate has no contemporaneous impact on credit to the private sector.

The study also observes that the CRC is ineffective in transmitting the effects of MP in Pakistan. A positive shock to interest rate has no significant impact on credit to the private sector. Further, a shock to the credit to the private sector has no significant effect on output. It implies that CRC is ineffective in Pakistan. Our results are consistent with Baig (2011); Hussain (2014); Imran and Nishat (2013), who also observes that the CRC is not useful in Pakistan.

Imran and Nishat (2013)also note that interest rate has no significant affect on CPRVS and its monetary conditions which influence CPRVS in Pakistan. Our results are also in conformity with Hussain (2014) who note that before 2000 CRC is effective, and after 2000 IRC is effective in Pakistan. SimilarlyKhan et al. (2016)also reach to the same conclusion that the low policy rate couldn't increase CPRVS in Pakistan. The one possible reason behind the ineffectiveness of CRC is the underdeveloped financial sector. The private sector prefers to use other financing modes than the banking sector (Hasan, 2015). Further, the major chunk of bank credit goes to the public sector compared to the private sector. According to SBP, in Dec 2018, almost 31% of commercial bank credit goes to the private sector, and the remaining 59% of the credit goes to the public sector. Hence, fewer resources are available for the private sector, which is the bone of any economy. Therefore, future studies can dig deeper to understand the actual reasons behind the ineffectiveness of CRC of MTM.

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Examining Antecedents of Customer Engagement: The Role of Customer Engagement Towards Driving Purchase Intention of Fashion Apparel Brands

Examining Antecedents of Customer Engagement: The Role of Customer Engagement towards Driving Purchase Intention of Fashion Apparel Brands

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Abstract

Although the literature on customer engagement is developing considerably, empirical studies on its drivers and outcomes are minimal. The aim of current paper is to examine the effect of brand interactivity, brand intimacy, brand involvement, brand psychological ownership, and brand trust on customer engagement.This research also seeks to measure the effect of customer engagement on purchase intention.A sample of 443 participants was collected employing a convenience sampling technique via a self-administered online survey from the users of fashion apparel brands in Pakistan. For the data analysis, researchers employed partial least squares. The findings of the structural analysis show that brand interactivity, brand involvement, brand intimacy and brand trust affects customer engagement.Overall, the results of this paper broaden the understanding of brand interactivity, brand involvement, brand psychological ownership, brand intimacy, brand trust, customer engagement and purchase intention in the fashion apparel context. This research expands the knowledge base of customer engagement in the fashion apparel sector. Research shows that brand managers should focus on non-brand owners because non-customers can also build intention to buy fashion apparel brands, if they are engaged.The current research focuses only on fashion brands in Pakistan. Future research may conduct research in other sectors and in different countries.

Keywords: Brand interactivity, brand intimacy, brand involvement, brand psychological ownership, brand trust, customer engagement, purchase intention

Introduction

Fashion is an industry of $1.75 trillion and numerous main fashion-related brands' sales are developing quickly around the world(Taylor & Costello, 2017). Fashion research has attained considerable attention among researchers around the world (Handa & Khare, 2013).Fashion is a dress that has been describedas desirable, attractive and popular by society at a certain point in time (Entwistle, 2015).Since clothing displaysone's identity and represents one's position and

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distinctiveness, it is likely that individuals are more careful when it comes to choose the "right" clothing brands (Islam & Rahman, 2016a).

In recent decades, transaction marketing has shifted towards relationship marketing where the latter emphasizing the significance of long lasting, valuable customer associations and interactions (Islam, Hollebeek, Rahman, Khan, & Rasool, 2019). With this changing perspective, novel concepts have appeared such as customer brand engagement (CBE)(Islam & Rahman, 2016b).As a result, CBE has attained considerable popularity over the previous decade (Prentice & Loureiro, 2018). Leading companies like Procter & Gamble, Starbucks, BMW, Louis Vuitton, Dell, and various others have included CBE into their strategic plans(Islam, Rahman, & Hollebeek, 2017).Managers and researchers have found over time that satisfaction is no longer adequate to guarantee loyal and lucrative customers (Rosado-Pinto & Loureiro, 2020).Thus, "the goal of organizations evolved from relationship marketing to engaging customers in all possible ways" (Pansari & Kumar, 2017, p. 294). More than 80% of marketers will seek to engage customers by building a relationship with them over the next five years, based on the expectation that engaged customers will buy 40% more per year for the next five years, and increase 20% premium in the form of profitability (Cheung, Pires, &Rosenberger, 2020).Gallup research highlights the benefits of customer engagement, showing that completely engaged buyers (compared to average engagedbuyers) receive 23% premium on average in the form of profit, revenue, wallet share and association development. Nevertheless, actively disengaged buyers represent a 13% reduction on these measures. This underlines the significance of CBE for the company(Gligor & Bozkurt, 2020).

In the literature, the association of CBE with brand loyalty has been strongly supported (Adhikari & Panda, 2019; Vikas Kumar, 2020; Rather & Camilleri, 2019). However, little research has been done on the influence of CBE on purchase intention.Researchers are recommended to devise novel models of engagement to engage non-brand customers with the brand(Kumar & Nayak, 2019a). Given the importance of CBE, several researchers have demanded further research to know the antecedents of CBE (Kosiba, Boateng, Okoe, & Hinson, 2018). CBE is comparatively in its initial stages and is driven primarily by conceptual reasoning. As knowledge expands, discussion towards the conceptualization of the construct continues; the development of the model is minimal and the empirical tests are limited(France, Merrilees, & Miller, 2016).According to the demand for a better understanding of CBE on the basis of empirical data from different backgrounds (Read, Robertson, McQuilken, & Ferdous, 2019), this research addressed this gap with the main goal of testing and developing a theoretical framework of CBE in the fashion apparel brands' context. In particular, the strength and directionality of relevant variables that are logically linked to CBE must be investigated, so identify and verify empirically the particular outcomes of CBE (Rather & Sharma, 2019), as confirmed by this research. However, more research has been done on customer engagement in developed and countries of West including Australia, New Zealand, and the United States (Rather, Tehseen, & Parrey, 2018) therefore, there are not many researches on CBE in developing countries such as Pakistan.

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Considering its impact on business results, companies strive to engage the customers with their products and brands (Prentice, Han, Hua, & Hu, 2019).This research offers managers the opportunity to engage non-customers in brand engagement initiatives. The results of this research confirms the theory that brand interactivity, brand intimacy, brand involvement, and brand trust influence customer engagement; further customer brand engagement effects purchase intention. This research supplements the existing theory in the form of driversof CBE and its outcomes for non-brand customers, which have not been extensively investigated so far.

This research has practical implications for managers to engage non-customers in their brand engagement initiatives. Engaging "non-brand owners" is significant because it consist of a broader market segment available to all companies. To fulfill the aforementioned gaps and challenges, the researchers suggest a conceptual model for understanding CBE of non-customers of the brand.Researchers suggest brand interactivity, brand intimacy, brand involvement, brand psychological ownership, and brand trust as the driver of CBE and purchase intention as the outcomes of CBE.The aim of current paper was to investigate the effect of brand interactivity, brand intimacy, brand involvement, brand psychological ownership, and brand trust on CBE. In this research, researchers also wanted to evaluate the impact of CBE on purchase intention.

Literature Review

Brand Interactivity

Brand interactivity (BI)indicates the interactive communication between consumers and brands (Cheung, Pires, Rosenberger, & De Oliveira, 2020).In the domain of engagement, a new concept of brand interactivity is introduced(France et al., 2016). Interactivity as a concept has a strong effect on the conceptual debates about engagement (Hollebeek, Glynn, & Brodie, 2014).Research reveals that when the brands pay attention to the customers and take part in interactive talks, then customers are engaged with brands(Gligor & Bozkurt, 2020).

Brand Intimacy

Intimacy described as the feeling of association and bond that arises over time(Gautam & Sharma, 2017). This intimacy is influenced by the intimate behavior of the consumer towards the brand and vice versa (Chu, Lee, & Kim, 2019). Unsurprisingly, brand intimacy (BIN)is now considered a marketing mantra (Bairrada, Coelho, & Coelho, 2018). Intimacy indicates the warmth element of the association and can develop over time (Wang & Lee, 2020).Brand intimacy described as how well consumers know the brand (Read et al., 2019). Brand intimacy implies the perception of buyers that the brand is really interested in their needs and makes a real effort to satisfy them(Breivik & Thorbjørnsen, 2008).

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Brand Involvement

Involvement is equated with different terms such as interest, significance, excitement, association to one's life, relevance, assurance and consideration or inspiration(Wen, 2020). Brand involvement (BIT) described as "perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky, 1985).Involvement refers to a cognitive, inspirational, and emotional construct that indicates a mind's state(Gligor & Bozkurt, 2020).Involvement stated as a level of buyer's attention and interest in a particular item based on his or her desires, beliefs, and goals (Hollebeek, 2011).

Brand Psychological Ownership

Brand psychological ownership (BPO) stated as "that state in which individuals feels as though the target of ownership (material or immaterial in nature) or a piece of it is 'theirs'" (Pierce, Kostova, & Dirks, 2001, p. 299).It has been examined that the feeling of BPO can be simulated simply by touching objects and just looking at them (Kumar & Nayak, 2019b).A "sense of ownership" for an object promotes the intentional participation of resources to the target object and promotes the behaviors of engagement (Jaakkola & Alexander, 2014).

Brand Trust

Trust is a complicated construct that deals with associations between persons, groups and organizations (Fulmer & Dirks, 2018).It has been argued that differences in the conceptualisation of trust as a feeling, an attitude, an intention, willingness, an expectation, a belief, confidence, or a psychological state lead to confusion, misunderstandings, and disruption of communication among researchers (Isaeva, Gruenewald, & Saunders, 2020). A trustor's trust stated as"psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another" (Rousseau, Sitkin, & Burt, 1998, p. 395).

Customer Brand Engagement

The engagement's concept has attracted great consideration from numerous researchers. For example, several studies have examined the engagement's concepts related to the fields of sociology, organizational behavior, educational psychology, political science, and more recently marketing(Hinson, Boateng, Renner, & Kosiba, 2019).CBE is a mind's state that is emotionally invested in the focus entity (brand or medium), leading to repeated customer interactions with the focus entity. Since customer engagement literature is still in its early stages, its operationalisation is still in development and has not yet converged (Thakur, 2018).CBE refers to "the intensity of an individual's participation in and connection with an organization's offerings and/ or organizational activities, which either the customer or the organization initiate" (Vivek, Beatty, & Morgan, 2012b, p.127). This CBE definition concedes that a supplier (brand) initiates an engagement or a customer and emphasizes the requirement for interaction between the target entity (i.e., brand) and the customer (Altschwager, Conduit, Bouzdine-Chameeva, & Goodman, 2017). CBE does not require

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the brand's ownership, and even if there is no personal ownership of the object (brand), engagement behavior can also be observed (Kumar & Nayak, 2019a).

Purchase Intention

Intentions are extensivelyemployed to study relationship outcomes in marketing literature (Raju, 2017). There is a theoretical support in literature that "intentions" is used as a strong indication of "actual behavior" and both are closely associated with each other (Kumar & Nayak, 2019c). Purchase intention (PI) can be perceived as a concern of customers when buying a particular brand (Kamalul Ariffin, Mohan, & Goh, 2018). The probability that a customer will purchase a specific product is determined by the association with the buyer's desires, values, and viewpoints about the brand or product (Beneke, de Sousa, Mbuyu, & Wickham, 2016).

Hypothesis Development

Brand interactivity is stated as the consumer insight of brand readiness and a real desire to be integrated into it (France et al., 2016).In the past research, there is evidence in literature where brand interactivity has been used as a driver of CBE (Read et al., 2019). BI has a positive association with consumers' readiness to take part in branding activities, proposing that customer engagement is the result of repetitive consumer-brand interactions (Cheung, Pires, Rosenberger, et al., 2020).Brands that are believed to have a great degree of interaction are moreexpectedto build personalrelations(Sawhney, Verona, & Prandelli, 2005).As a result, the consumer feels more commended and motivated to interact with the brand, which strengthens the bond and leads to higher CBE(Gligor & Bozkurt, 2020).Although there is a strong conceptual foundation and theoretical justification, brand interactivity has remained an empirically under-investigated antecedent of CBE(Adhikari & Panda, 2019). So, brand interactivity is included in this paper to provide a new perspective that has direct and positive influence on CBE.Therefore, on the basis of above discussion, the following hypothesis can be proposed:

H1: BI positively affects CBE.

Brand intimacy, described as a customer's understanding of how much a brand cares for them and is committed to consider and fulfil their desires, necessitates interactions that help a brand to fully understand customers' needs and preferences (Bairrada et al., 2018). The level of intimacy relies on how brands and consumers describe their association to each other; it is consumers' understanding of closeness in their connection to the brand (Chu et al., 2019). CBE can be stated as "the readiness of a customer to actively participate and interact with the focal object (e.g. brand/organization/community/website/organizational activity), [which] varies in direction (positive/ negative) and magnitude (high/low) depending upon the nature of a customer's inter- action with various touch points (physical/virtual)" (Islam & Rahman, 2016c, p. 2019). Past research has shown that brand intimacy affects CBE in the context of Twitter (Read et al., 2019). However, there has

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been very little research on the effect of brand intimacy on CBE in the fashion apparel context.From the above review, this research hypothesizes:

H2: BIN positively affects CBE.

Involved buyers show great interestin the company/brand and observe individual importance(De Vries & Carlson, 2014). This great concern, individual importance or psychological commitment to the company / brand has a positive association with buyers' level of engagement with the company/brand(Gligor & Bozkurt, 2020).BIT is extensively consideredas a significant determinant which influencescustomer brand engagement (France et al., 2016).Engagement has been drawn from social exchange theory and a number of studies suggest that it can be created together and started by one of the exchange participants: the customer or the company (Obilo, Chefor, & Saleh, 2020).In literature, involvement has gained great attention in the social media context and is being employed as a vital antecedent of CBE (Touni, Kim, Choi, & Ali, 2020). Brand involvement is empirically related to CBE (France et al., 2016).Accordingly, on the basis of above discussion, current research hypothesizes:

H3: BIT positively affects CBE.

People have a tendency to build a sense of ownership of tangible and intangible assets such as cars, brands, locations, destinations, etc. (Kumar & Nayak, 2019c).The effect of perceived psychological ownership on positive behavior creation and greater evaluation of target objects is theoretically supported by consumer research (Kirk, Swain, & Gaskin, 2015).Brand psychological ownership is comparatively novel, as the antecedent of CBE (Kumar & Nayak, 2019b).Psychological ownership has been described as the feeling that something is "mine" even if I don't actually own it. Psychological ownership differs from legal ownership (Kou & Powpaka, 2020). The sense of ownership is alsodescribed as a significant source of CBE behaviors on social media (Jaakkola & Alexander, 2014).However, the concept of BPO is in the early stages of marketing (Hulland, Thompson, & Smith, 2015). The connection between BPO and customer engagement is less explored in the fashion apparel context.From the above discussion, the following hypothesis can be proposed:

H4: BPO positively affects CBE.

Trust is considered as a stimulant in the association between consumer and marketer because it gives expectations, as a lack of trust is being identified as one of the major reasons towards non-engagement of consumers (Agyei, Sun, Abrokwah, Penney, & Ofori-Boafo, 2020).When a customer has confidence or trust in a brand, he or she may recommend it to others, accept it when buying a product, and use more of the brand's goods and services (Hinson et al., 2019). Customer engagement is considered to be based on trust because every interaction or exchange requires acomponent of trust. Thus, when trust is developed in an association, they are more likely to participate in collaborative interactions or exchanges(Chai & Kim, 2010).Accordingly, trust can be regarded as anantecedent of customer engagement as it creates collaboration and interaction, which is essential in

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developing enduring association with buyers.Previous research has found that trust affects engagement (Kosiba et al., 2018).So, on the basis of the above review, following hypothesis can be built:

H5: BT positively affects CBE.

Consumers who engage with the brand can build a positive attitude toward the focal brand compared to those who are not engaged (Hollebeek, 2011). This gives result in a higher assessment of the main brand; improved personal association with the brand (Harrigan, Evers, Miles, & Daly, 2018), it consequently strengthens PI (Harmeling, Moffett, Arnold, & Carlson, 2017).From the perspective of customer and brand interaction, based on the theory of social exchange researchers formulate this hypothesis (Blau, 1964) since members assess brand offerings (functional and hedonistic) that arise from their brand engagement (individual and societal interactions) and be inclined to respond with a positive attitude to buy the brand.Current marketing literature discusses the concept of engagement (Risitano, Romano, Sorrentino, &Quintano, 2017). It is known that the engaged customer has a strong brand connection and a favourable emotional outlook toward the brand(France et al., 2016). Priorresearch has shown that there is a positive association between CBE and PI(Islam et al., 2017). When consumers engage with the brands, these emotional relations directly affect their behavioral intentions with respect to purchase intentions (Risitano et al., 2017).Understanding of CBE is still in the early stages, and therefore more research is needed (Algharabat, Rana, Alalwan, Baabdullah, & Gupta, 2020).Very few researches have explored the association between CBE and PI (Joshi & Srivastava, 2019).According to the above review,current research hypothesizes:

H6: CBE positively affects PI.
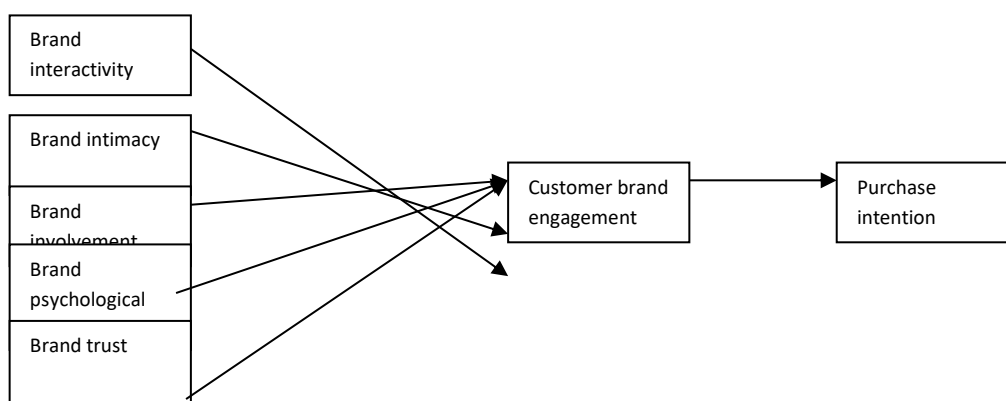
Figure 1 Conceptual framework

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Research Methodology

The research methodology is one of the main parts of any research in order to attain its objectives. The selection of appropriate techniques for analysis should depend on the type of problem (Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018). So, taking into account the research problem, the objectives and the nature of this study a quantitative research approach and a cross-sectional design were selected.The population for this research consisted of men and women of Pakistan who have purchased or intend to buy fashion apparel brands. In this study, the target population is considered to be an infinite population. The term "infinite population" refers to a condition in which the total number of population components is unknown or undocumented (Preko, Mohammed, Gyepi-Garbrah, & Allaberganov, 2020). In Pakistan, there is no official statistics on the number of customers of fashion apparel brands.

Since a mono-quantitative method was employed to analyse and perform statistical procedures in this research, an online self-administered survey was adopted for collecting data. A convenience sampling technique was used in this research. The questionnaire is administered through Google Forms and its link was sent to the target audience via email. A sample of 443 participants was collected. Several studies have demonstrated that e-mail surveys are an effective method to gather data from both professions and wealthy people of society (Jain, Khan, & Mishra, 2017).There was no research frame available for the target population. As a result, a non-probability sampling technique was applied to choose the sample.The non-probability convenience sampling technique is an acceptable approachas it is used in many emerging engagement studies(France et al., 2016).The marketing literature has used convenient sampling to reach the target audience(Algharabat, 2018).

Measurement

Customer brand engagement included 4-items (Hollebeek et al., 2014).BPO contained four-items originally developed by (Pierce et al., 2001).Brand intimacy was measured using five-items(Aaker, Fournier, & Brasel, 2004).Brand involvement consisted of six-items originally developed by(De Vries & Carlson, 2014). Brand interactivity contained five-items originally developed by(Merrilees & Fry, 2003).Brand trust was measured using five-items(Chaudhuri & Holbrook, 2001; Delgado-Ballester, Munuera-Aleman, & Yague-Guillen, 2003).Purchase intention was measured using (Lee, Kim, Pelton, Knight, & Forney, 2008) and (Son, Jin, & George, 2013) instrument comprising 5-items. All items were graded on a five-point Likert scale that ranged from strongly disagrees (1) to strongly agree (5).

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Table 1 Demographic analysis

		Frequency	Percentage
Gender	Male	225	50.8
	Female	218	49.2
Area of residence	Rural	121	27.3
	Urban	265	59.8
	Suburban	57	12.9
Qualification	Less than primary	01	0.2
	Primary	02	0.5
	Matriculation	01	0.2
	Intermediate	19	4.3
	Graduation	164	37.0
	M.Phil/PhD	256	57.8
Marital status	Unmarried	259	58.5
	Married	176	39.7
	Divorced	04	0.9
	Widow	01	0.2
	Separated	03	0.7
Occupation	Student	174	39.3
	Employed	144	32.5
	Businessman	11	2.5
	Professional	73	16.5
	Unemployed	16	3.6
	Other	25	5.6
Age	Less than 25	158	35.7

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	26-30	112	25.3
	31-35	86	19.4
	36 and above	87	19.6
Monthly income	Less than 20,000	222	50.1
	21,000-50,000	93	21.0
	51,000-80,000	75	16.9
	81,000 and above	53	12.0

Demographic Analysis

Table 1 demonstrates the demographics of the 443 different responses. Of the 443 participants, 225 (50.8 per cent) were men and 218 (49.4 per cent) were women. In this study, 121 (27.3per cent) respondents belong to rural areas, majority of respondents 265 (59.8per cent) live in urban areas and 57 (12.9 per cent) belong to suburban areas. One participant had less than primary qualification with the percentage of 0.2. Two participants had primary qualification with the percentage of 0.5. One participant had matriculation qualification with the percentage of 0.2. A total of 19 intermediate students participated with the percentage of 4.3, 164 Graduate students filled the questionnaire with the percentage of 37.0 and most of respondents 256 (57.8 per cent) M.Phil/ PhD took part in the survey. Among the respondents, 58.5 per cent were unmarried, 39.7 per cent were married, 0.9 per cent divorced, 0.2 per cent were widow and 0.7 per cent were separated; among the respondents (39.3 per cent, were students, 32.5 per cent were employed, 2.5 per cent were businessman, 16.5 per cent were professional, 3.6 per cent were unemployed and 5.6% belong to other professions. Among the participants, 35.7 per centparticipants were below 25 years, followed by age groups 26-30 (25.3 per cent), 31-35 (19.4 per cent), and 35 and over (19.6 per cent). The majority (50.1 per cent) of the respondents have less than 20,000 monthly income, followed by monthly income 21,000-50,000 (21.0 per cent), 51,000-80,000 (16.9 per cent), 81,000 and above (12.0 per cent).

Results

The data was evaluated using Partial Least Squares (PLS). For data analysis, PLC has proven to be a suitable technique for examining relationships that have not yet been explored, or when the constructs examined are relatively new or evolving (Šerić & Vernuccio, 2019). Since CBE is a new concept, this study meets these criteria (Algharabat, Rana, Alalwan, Baabdullah, & Gupta, 2020).

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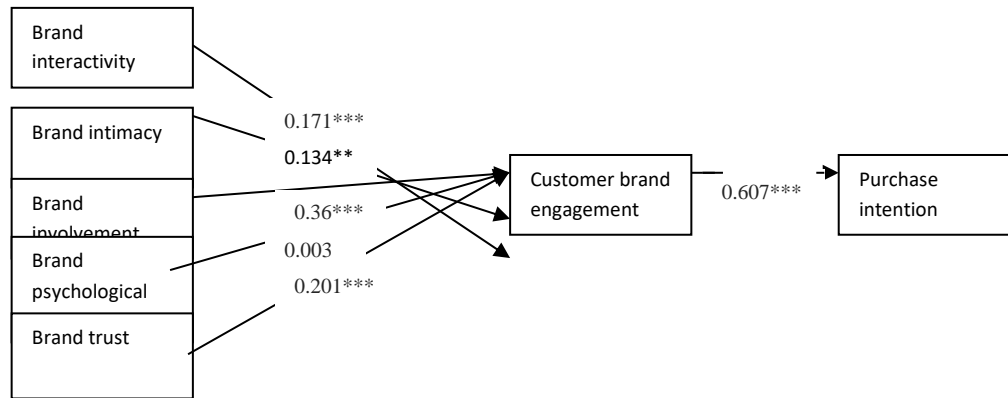
Figure 2 Structural model

Measurement Model Evaluation

Convergent validity and discriminant validity are two types of validity that were examined to evaluate the measurement model. The measurement model's convergent validity is generally determined by testing the loadings, average variance extracted and composite reliabilityas well (Gholami, Sulaiman, Ramayah, & Molla, 2013). The composite reliability ranges from 0.876–0.928, which is higher than 0.7 and all average variance extracted values ranges from 0.641–0.764, which is greater than 0.50 as shown in table 2. Therefore, it meets the average variance extracted criterion as proposed by (Jr, Hult, Ringle, & Sarstedt, 2016). These values established the measurement model's convergent validity.

Fornell & Larcker, (1981)and Hetero-Trait–Mono-Trait ratio are two methods that have been used to confirm discriminate validity (Henseler, Ringle, & Sarstedt, 2015). As stated in Fornell & Larcker, (1981)method that discriminate validity is confirmed when the correlation between constructs is lower than the square root of average variance extracted. Correlations between all constructs are lower than the square root of average variance extracted as shown in Table 3.The discriminate validity evaluation, on the basis of (Henseler et al., 2015) heterotrait-monotrait ratio of correlations measure, demonstrates that all the heterotrait-monotrait values are less than 0.85 (Franke & Sarstedt, 2019), thus supporting the measures' discriminate validity as shown in Table 4.In short, convergent and discriminant validity of the measures were established in this study.

Table 2: Measurement model evaluation

Constructs	items	Item loadings	CR	AVE
Brand interactivity	BI1	0.78	0.914	0.68
	BI2	0.837		
	BI3	0.855		
	BI4	0.82		
	BI5	0.831		
Brand intimacy	BIN1	0.839	0.892	0.673

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	BIN2	0.852		
	BIN3	0.84		
	BIN4	0.791		
	BIN5	0.753		
Brand involvement	BIT1	0.802	0.909	0.666
	BIT2	0.806		
	BIT3	0.86		
	BIT4	0.813		
Brand psychological ownership	BPO1	0.845	0.928	0.764
	BPO2	0.86		
	BPO3	0.886		
	BPO4	0.904		
Brand trust	BT1	0.834	0.901	0.646
	BT2	0.743		
	BT3	0.838		
	BT4	0.822		
	BT5	0.777		
Customer brand engagement	CBE1	0.773	0.876	0.641
	CBE2	0.854		
	CBE3	0.857		
	CBE4	0.708		
Purchase intention	PI1	0.804	0.912	0.676
	PI2	0.784		
	PI3	0.811		
	PI4	0.856		
	PI5	0.854		

Table 3: Discriminant validity (Fornell and Larcker'sCriterion)

Constructs	1	2	3	4	5	6	7
Brand Interactivity	**0.825**						
Brand Intimacy	0.563	**0.821**					
Brand Involvement	0.616	0.679	**0.816**				
Brand Psychological Ownership	0.568	0.633	0.733	**0.874**			
Brand Trust	0.486	0.688	0.638	0.556	**0.804**		
Customer Brand Engagement	0.572	0.616	0.688	0.564	0.607	**0.8**	
Customer Purchase Intentions	0.424	0.549	0.597	0.469	0.569	0.607	**0.822**

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Table 4: Discriminant validity -HTMT

Constructs	1	2	3	4	5	6	7
Brand Interactivity							
Brand Intimacy	0.651						
Brand Involvement	0.703	0.791					
Brand Psychological Ownership	0.634	0.727	0.831				
Brand Trust	0.553	0.803	0.73	0.624			
Customer Brand Engagement	0.669	0.747	0.814	0.656	0.725		
Customer Purchase Intentions	0.477	0.638	0.675	0.522	0.649	0.716	

Structural Model Evaluation

The findingssupport five of the six hypotheses as shown in table 5. Brand interactivity was found to influence CBE (β=0.171, t=4.098, p < 0.001), thus confirming H1. Brand intimacy positively affectsCBE (β=0.134, t=2.245, p < 0.05), so confirming H2.The findings also revealed that brand involvement had a significant and positive influence on CBE (β=0.36, t=6.09, p < 0.001), thus confirming H3. A negative relationship was found between brand psychological ownership (β=0.003, t=0.062, p > 0.05), thus rejected H4. Brand trust was also positively related to CBE (β=0.201, t=3.699, p < 0.001), therefore confirming H5.The outcomes also demonstrated that customer engagement was found to influence purchase intention (β=0.607, t=16.071, p < 0.001), thus supporting H6.In this research, it was found that brand involvement had the most significant impact on CBE. The higher the extent of brand involvement, the more likely customers engage with the brand. Likewise, the findings revealed that CBE had also the most significant effect on PI. The higher the extent of CBE, the more likely purchase intention of fashion apparel brands increased.Brand interactivity, brand intimacy, brand involvement, brand psychological ownership, and brand trust overall explained 0.551% of the variance in customer engagement. Customer engagement explained 0.369% of the variance in purchase intention.

Furthermore, size of R^2 and f^2 and the predictive sample reuse technique (Q^2) can also efficientlydemonstrate predictive relevance(Chin, Peterson, & Brown, 2008). A Q^2higher than 0 shows that the model has predictive relevance, while a Q^2 lower than 0 shows that the model lacks predictive relevance (Ali, Kim, & Ryu, 2016).All the Q^2 values are higher than 0,which demonstrate that the model has acceptable predictive relevance.For measuring the level of the effect size researchers employedCohen's (1988) guidelines which are 0.02, 0.15 and 0.35 for small, medium and large effects correspondingly.All the values of f^2 are shown in table 5, most of therelations have a small effect, and one relationship has medium effect. Similarly, one relationship hasa large effect as well.

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Table 5: Structural estimates

Hypotheses	Beta	T value	Decision	F square
H1:Brand Interactivity -> Customer Brand Engagement	0.171	4.098	Supported	0.037
H2: Brand Intimacy -> Customer Brand Engagement	0.134	2.245	Supported	0.016
H3: Brand Involvement -> Customer Brand Engagement	0.36	6.09	Supported	0.098
H4: Brand Psychological Ownership -> Customer Brand Engagement	0.003	0.062	Rejected	0
H5: Brand Trust -> Customer Brand Engagement	0.201	3.699	Supported	0.042
H6: Customer Brand Engagement -> Purchase Intentions	0.607	16.071	Supported	0.585

Notes: Critical t-values. *1.96 (P < 0.05); **2.58 (P < 0.01).

Discussion and Theoretical Implications

The results of this paperexpand the current knowledge base by giving empirical evidence for the impact of brand interactivity, brand intimacy, brand involvement and brand trust on customer engagement.The current research also examinedthe influence of CBE on PI in the fashion apparel sector.Results of this research are intriguing. The findings are almost consistent with the expected associations discussed in previous studies. Overall, the empirical findings of this study have confirmed almost all of our hypotheses, only one hypothesis is rejected.

This research found that in the fashion apparel sector brand interactivity, brand intimacy, brand involvement and brand trust influence CBE.Moreover, the results also verified the role of CBE in promoting the buying intention.The findings revealed that the brand interactivity affects CBE, which is consistent with the past study of (Gligor & Bozkurt, 2020). Brand intimacy influences customer engagement;which is in line with previous researchof (Read et al., 2019). Intimacy involves a strong bond and tremendous intrigue between the customer and the brand. Based on the best knowledge of authors, this study is one of the first research initiatives on the association between brand intimacy and CBE in the fashion apparel context.The findings also demonstrated that brand involvement affects CBE. The findings are consistent with the research of (France et al., 2016). Furthermore, brand involvement plays asignificant role in promoting engagement.

However, the association between brand psychological ownership and CBE (H4) was not supported. The results are inconsistent with previous study of (Kumar & Nayak, 2019b). The findings reveal that psychological ownership's sense of the brand is having a negative impact on CBE. The empirical findings have shown that a brand trust among non-customers can be a predictor of CBE,which is in line with previous researchof (Agyei et al., 2020).Results revealed that CBE positivelyaffects purchase intention, which finds support in the research of (Kumar & Nayak, 2019a).

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This study adds to the existing literature base by examining CBE in the fashion apparelcontext, in order to respond to calls for the contextual specific research of the concept(Kumar, Rajan, Gupta, & Pozza, 2019; Roy, Shekhar, Lassar, & Chen, 2018).Researchersconducted empirical research in anemerging economy and expandedthe engagement literature.While developing economies present a considerabledevelopmentpotential for multi-national corporations(Islam, Rahman, & Hollebeek, 2018),limited CBE research has been carried out in the emerging markets (Hollebeek, 2018; Islam et al., 2019), as conducted in this research.

Conclusion

Customer brand engagement has attracted increasing attention from academics and practitioners. Companies are increasingly redesigning their marketing strategies to enhance customer engagement with their products and services. However, the hyper competition is increasingly making these efforts more difficult with the passage of time. It can be concluded that the presentpaperunderlines the significance of CBE for contributing to the purchase intention in fashion apparel brands. Although the literature on customer brand engagement is developing considerably, empirical studies on its drivers and outcomes are minimal. This research was carried outfor creating and testing a research model to improve our insight by examining how CBE is built using brand interactivity, brand intimacy, brand involvement, and brand trust in the fashion apparel industry. The suggested model addressed the major issue in CBE by focusing on non-brand owners rather than current brand buyers.The results demonstrate that brand interactivity, brand intimacy, brand involvement and brand trust positively influencesCBE. Furthermore, this research also found that CBE positivelyaffectsPI.Therefore, this paper broadens the perspective of the research and the content of customer engagement. This research would provide various new insights into this embryonic concept and its ramifications for CBE.This paper expands the knowledge base of CBE in the fashion apparel industry. This study call for other researchers to create novel premises to better understand the underexposed paradigm of CBE.

Managerial Implications

The findings of current paper propose many managerial implications. The results demonstrate that marketers can build strategies to promote their fashion apparel brands that will encourage CBE to improve their buying intentions. CBE's positive effect on purchase intention requires fashion clothing companies to make various platforms available to non-customers as well, including Facebook branded pages and blogs, to engage them. This researchbroadens CBEliterature in the fashion apparel sector in various ways.Ithas practical implications for managers who are responsible for developing communication strategies.From a management perspective, the results of this research invite marketers to review the use of brand interactions in the formation of CBE.Managers should focus on non-customers of brands because non-brand owners can also develop intention to buy the fashion apparel brand.

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Limitations and Future Research

This research is not without limitations.These limitations can be opportunities for future researchers. This research only relates to the fashion apparel sector. Future studies should explore other industries including tourism, hotels and restaurants to confirm the findings presented in this study to strengthen cross-sector validity.As a convenience sampling method adopted in this research. Therefore, further research should employ random sampling; it willenhance the reliability and validity of results.In future studies, the proposed model can be tested using other methodologies. Researchers may investigate additional variables such as brand quality, brand awareness, brand meaningfulness, brand self-congruity, brand imageand other possible variables that affect CBE.

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