Perspective Regarding Behavioral Intention Maintaining Food Security in District Haveli AJK

Muhammad Qaddafi Khan Wali
Department of Development Studies, Comsats University, Abbottabad Campus, Pakistan.
***Arif Alam, PhD**
Department of Development Studies, Comsats University, Abbottabad Campus, Pakistan.

The present study investigated the empirical relationship and significance of perceived usefulness, normative belief, perceived information quality, facilitating conditions, social norms, attitude, perceived behavioral control, and behavioral plan to improve food security condition of people living in the mountains of Azad Jammu Kashmir, Pakistan. The moderating effect of nutritional self-control was also tested. This study was descriptive in nature with a cross-sectional quantitative survey of sample size 351. The Partial Least Square method (PLS-SEM) was used for data analysis. Empirical findings showed the significance and causal linkage between normative belief and perceived information quality with social norms, attitude, and perceived behavioral control, which further showed a positive association with a behavioral plan. However, there was a non-significant relationship between perceived usefulness, attitude, and perceived behavioral control. Facilitating conditions were found to be non-positively associated with social norms and perceived behavioral control. Finally, the moderator effect of nutritional self-efficacy was found non-significant.

Keywords: Behavioral Intentions, Normative Belief, Perceived Information Quality, Food Security, Behavioral Plan.

---

*Correspondence concerning this article should be addressed to Arif Alam, PhD, Assistant Professor, Department of Development Studies, Comsats University, Abbottabad Campus, Pakistan. Email: arifalam@cuiatd.edu.pk and Muhammad Qaddafi Khan Wali, Department of Development Studies, Comsats University, Abbottabad Campus, Pakistan.

Food insecurity is something more than just hunger, as 820 million people on this globe are still hungry. Around 2 billion individuals on the sphere experience moderate or severe food insecurity due to a lack of regular access to nutritious, and sufficient food. Malnutrition and poor health are the ultimate results of lack of access to nutritiously sufficient food. In 2018, the prevalence of undernourishment in the world was 10.8 %, with Africa leading at ”19.9 %, followed by Asia at 11.3 %, Latin America and Canada with 6.5 % North America and Europe with less than 2.5 % (FAO & UNICEF, 2019).

Food security is defined as having physical and economic access to enough food to meet one's dietary needs for a productive and healthy life at all times (FAO, 1996).

People are motivated to change their behavior by these cognitive touchpoints (Young et al,.2018). It's not easy to change one's behavior. As a result, people frequently struggle to carry out their behavioral intentions (Sheeran & Webb, 2016). This circumstance describes the so-called intention-behavior gap, based on the inconsistency between behavioral intention and the actual behavior (Orbell & Sheeran, 1998). This gap is a critical aspect of this discrepancy is a crucial feature of behavior shifts.

The Theory of Planned Behavior (TPB) describes that human behavior is strongly based on the formed intention. It further reveals that intention is formed by many determining factors.

In the light of the theory of planned behavior (TPB), the decision to diversify food intake starts from a household head, which is based on attitude, subjective norms, and perceived behavioral control. The use of these specific constructs enables us to perceive, how a family unit head assesses the probability of diversification in food intake (Attitude), confirm the social weight perceived by a household head to make a move for food security, and distinguish the impression of a family of their capacity to utilize their technique at household level (Perceived behavioral control).

In addition to these constructs present study attempted to incorporate other constructs like perceived usefulness (PU), Normative belief (NB), Perceived information quality (PIQ), and Facilitating conditions (FC) to identify their effect on the behavioral plan (BI). These

constructs are taken from different technology-based models to use them to such an extent to which an individual believes in the perception of his ability to secure food, how he believes in using an information system will enhance their productivity.

Attitude (AT), Social norms (SN), and Perceived behavioral control (PBC) give behavioral intention (BI) as their function. Research deliberates about examining the relationship between self-efficacy & behavioral change, known as weight loss (Walpole et al., 2013), nutrition (Richert et al., 2010; Anderson et al., 2010), exercises (Anderson et al., 2010; Williams & French, 2011), and chronic disease management (King et al., 2010; Wolf et al., 2013), have shown the crucial role of self-efficacy in improving well-being.

As far as we could know a little work has been done in terms of food security and its relationship to TBP, TRA, and UTAUT. The present examination is the first of its kind endeavored to investigate and explore empirically the relationship between (PU), (NB), (FC), (PIQ), (AT), (SN), (PBC), and (BI). It also attempted to examine the moderator effect of (NSE) on (BI).

The primary objective of this study is to explore the empirical relationship between behavioral intention and different constructs. Present examination explicitly intends to build up a hypothetical framework that directs the drivers for food security at the family unit level and to test the proposed framework in the precise context.

This paper is sorted out as follows, a proposition of a hypothetical model for probing the factors of behavioral plans for food security. Secondly, a discussion on the data collection procedure and the research method applied is done. Finally, a presentation of the outcomes from data analysis is shown. The paper concludes with a discussion of the research findings and guides for future research.

Literature Review

Icek Ajzen, (1991) developed a theory of planned behavior (TPB) from the theory of reasoned action proposed (TRA), (Ajzen & Fishbein,1980), which focused on the plan of a person to act in certain behavior. A plan to act is the immediate cause of the behavior. (Ajzen,

1991) stresses that performance is strongly linked with the plan of engaging in a behavior. For a person to become voluntarily engaged in behavior or not able to decide his/her plan results in behavior (Ajzen, 1991). Behavioral intention addresses an individual's inspiration in the feeling of her or his conscious plan, decision, or self-instruction to apply exertion to achieve certain behavior (Conner, 2020).

The opportunities and resources are prioritized by Sen's in his Capability theory approach, 1980, and stressed the need for improving the capability of a household by providing basic needs and additional resources. Sen believed that if you grow the assets of a person and help improve his capability, he will be able to meet his basic needs to live a better life. Different researchers have embraced Sen's approach and formed them into the Capability Approach, an endeavor to build up a framework for the assessment of individual prosperity (Alkire, 2002; Nussbaum, 2000; Clark, 2005; Robeyns, 2006; Sen, 1999, Kimmitt et al., 2020). Thus, by the concept of (Ajzen,1991) that behavior and plan of a human depend on opportunities and resources, it can be concluded that by improving the capability of a human, he can improve his well-being.

Attitudes towards nutrition care correlated positively with self-efficacy to provide nutrition care (Mogre et al., 2017). As per the social intellectual hypothesis, self-efficacy impacts behavior (Bandura, 1982). Some studies suggested that nutrition self-efficacy played a much stronger role in predicting behavior outcomes (Hall et al., 2016). It is further supported by (Sekerdej & Szwed, 2021) who found that confidence in one's efficacy drives the person to shield one's thoughts in any event, and it permits one to adapt to the affliction that may emerge as a result of doing as such.

Research Framework

Built on the literature reviewed, a framework has been projected for this study, as shown in Figure 1.

A. Dependent Variable – Behavioral Intention (BI)

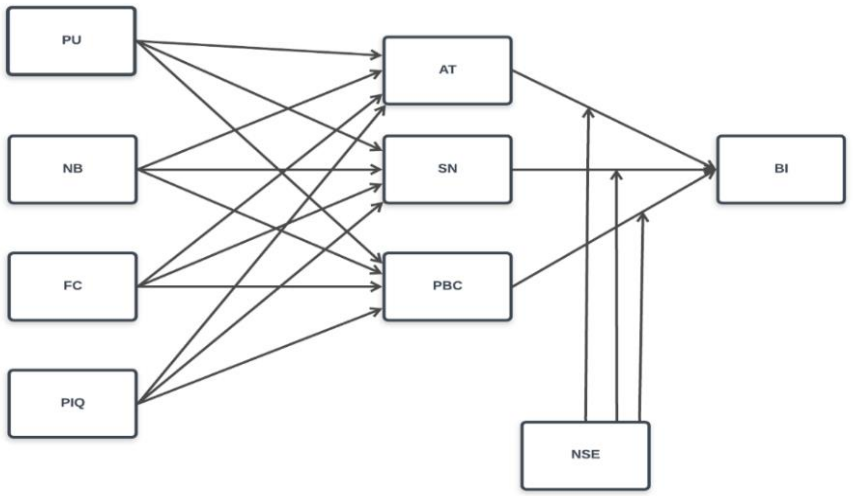
B. Independent Variables

PU has an immediate effect upon behavior intentions, which is helpful towards the actual behavior. Normative behavior, facilitating

conditions, and Perceived information quality is independent variables that also affect attitude, social norms, perceived behavioral control. The question here is how to deal with difficulties and obstacles associated with the adoption of sustainable food security. Recommendations with changes in healthy eating from the scientific community are often seen as weak in terms of daily use. That is why we have decided to abandon traditional methods of research on healthy eating science and focus on the behavioral-intentional gap.

Figure 1

Conceptual framework showing relationship between various constructs



Based on the research framework, we come up with several hypotheses below.

Hypothesis H1: A household (HH) member perceives there will be a solid relationship amid food security (FS) and social norms

Hypothesis H2: Normative belief will positively affect the attitude of a HH to improve FS.

Hypothesis H3: Facilitating conditions will positively affect attitude to improve food security

Hypothesis H4: Attitude will be positively correlated with perceived information quality.
Hypothesis H5: Perceived information quality will have a positive effect on social norms to apply FS at the HH level.
Hypothesis H6: The attitude of an individual will have a positive relationship with behavioral intention.
Hypothesis H07: Perceived behavior will have a direct link with the intention to improve food security
Hypothesis H08: Perceived usefulness will have a positive effect on attitude
Hypothesis H09: Facilitating conditions will have a direct effect on perceived behavioral control
Hypothesis H10: Facilitating conditions will be associated with social norms
Hypothesis H11: Nutritional Self-efficacy will have moderating effects on PBC, SN, and AT.

Method

The mixed-method approach was used as both qualitative and quantitative data were collected. Information was collected through a well-structured questionnaire which was pre-tested.

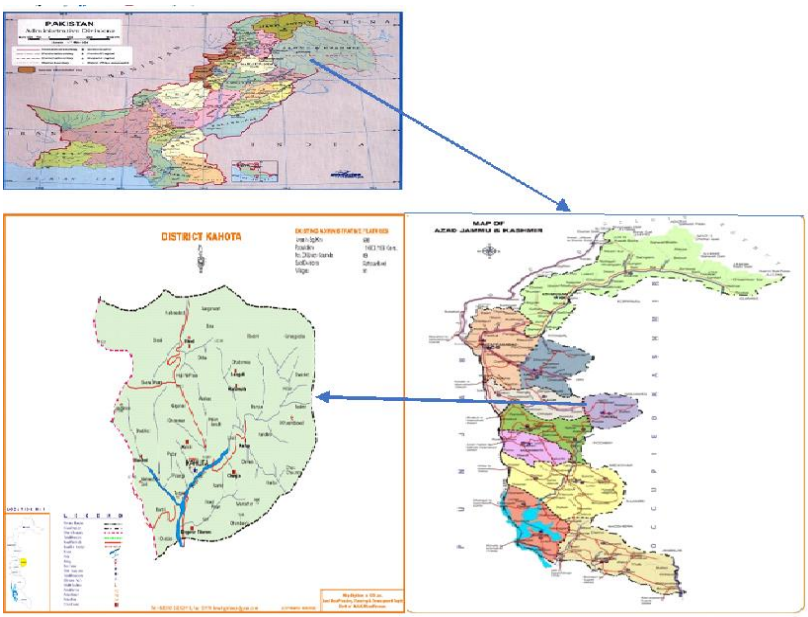
Study area

Azad Jammu and Kashmir (AJK) is the Pakistan administrative part of Kashmir. It has ten districts. The area selected for study is the Haveli district. Haveli is the eastern district of Azad Jammu and Kashmir (AJK) which lies at the line of control between AJK and Indian Occupied Kashmir (IOK). It has a mountainous and semi-hot climate. The population of Haveli according to the 2017 population survey is 0.152 million. The average family size is 6.8. There are three tehsils in Haveli mainly Khurshidabad, Haveli, and Murtzabad. The rationale for choosing the district of Havel for the study is because it is situated along the line of control (LOC) between Pakistan administrative Kashmir and India Occupied Kashmir (IOK) which is very vulnerable to security as cross-firing is very common in these areas, Second reason to select this area is

due to poor infrastructure, usually cut off from main cities in extreme winter, low job opportunities, low agriculture production(Planning AJK, 2015).

Figure 2

Study Area



Sample

The simple random sampling technique was used to collect the data. A cross-sectional study was conducted as it gives equal opportunity to the people in the study area. Due to time and security constraints, only 500 questionnaires were distributed. From 500 questionnaires, 351 were received. Yet, 149 questionnaires stood not received due to lack of time with respondents and also because of lack of interest on respondents' part.

Model

The model in the present study was estimated with the help of Partial Least Squares with Smart PLS. The partial least squares path modeling or partial least squares structural equation modeling (PLS-

PM, PLS-SEM) (Hair et al., 2017 & 2018), is a method of structural equation modeling that permits estimation of complex cause-effect relationship models with latent variables.

The association among the indicators of the endogenous variables (y), their associated measurement error (ε), and the latent endogenous variables (η)

$$\mathbf{y1 = \lambda y1\ \eta1 + \varepsilon1} \quad (1)$$
$$\mathbf{y2 = \lambda y2\ \eta1 + \varepsilon2}$$
$$\mathbf{y3 = \lambda y3\ \eta2 + \varepsilon3}$$
$$\mathbf{y4 = \lambda y4\ \eta2 + \varepsilon4}$$

Using matrix algebra, theoretical calculations denoted as the structural model, are given below.

$$\eta = B\ \eta + \Gamma\ \chi + \zeta. \quad (2)$$

Equation 1 (Theoretical equations), in lieu of non-observational hypotheses and hypothetical definitions. These conceptual equations are then also referred to as the basic/structural model, contrary to this, measurement models are built by the measurement equations, the term structural equation model can be subsumed both combined.

Xi(ξ) =Exogenous latent constructs depending on the dictionary used.
Η (eta) = latent endogenous variable
Γ (У) = Paths linking ξ to η denoted statistically as Gamma coefficients.
(β) = paths linking one of η to another, are designated as Beta
ζ (zeta) = error terms
λyi (lambda y) = loadings of the indicators for endogenous variable.
εi (epsilon) = measurement errors of the indicators for endogenous variable

The following relation was used to find the causal influence of formative indicators on latent variables.

$$\mathbf{\eta = \gamma_{x1}\ x_1 + \gamma_{x2}\ x_2 + \gamma_{x3}\ x_3 + \gamma_{x4}\ x_4 + \zeta} \quad (3)$$
$$\mathbf{\eta_{BI} = \beta_1 \eta_{AT} + \beta_2\ \eta_{SN} + \beta_3\ \eta_{PBC} + \zeta} \quad (4)$$

Analysis

Descriptive statistics, smart partial-least square were used to analyze the research hypotheses. Descriptive statistics were used to

explore the demographic characteristics of a household. Exploratory factor analysis (EFA) was therefore used to condense data to a reduced set of summary variables and to explore the fundamental theoretical structure for any phenomena. EFA was performed using Principle component analysis (PCA). PCA is meant for a minimum number of factors to describe the maximum portion of the variance in the original variable. Factors are extracted by using eigenvalue criteria. Varimax rotation method, used to simplify the column of the factor matrix so that the factor extracts are associated, expecting some separation among the variables. Validity and reliability are done through Cronbach's alpha, construct reliability, and convergent validity. Finally, Structural Equation Modeling (SEM) was used to perform confirmatory factor analysis (CFA).

The study preferred the use of partial least squares path modeling or partial least squares structural equation modeling (**PLS**-PM, **PLS-SEM**), because of minimizing the error terms and maximizing the R2 values of the endogenous constructs'' (Hair et al., 2017).

Factor Loading (Reliability and convergent validity)

Statistical techniques like test-retest, split-half methods, and Cronbach's alpha are common in used for the measurement of reliability of the instrument. The acceptable lowest range for Cronbach's alpha is (0.70), although a few studies reported as lower to as (0.60) as accepted value (Chandio, 2014).

The high core uniformity of the constructs is demonstrated in table 2. Cronbach's alpha (CA) is above the recommended value of (0.70) as suggested by Nunnally & Bernstein (1994). A higher value above 0.90 is also reported by (Chandio, 2014). The composite reliability given in table 1 reflects the shared variance among observed variables (Fornell & Larcker, 1981). The suggested value for composite reliability is above 0.60, (Bagozzi& Yi, 1988). The average variance extracted (AVE), for each construct, was calculated and is above the desired value of 0.50, (Fornell & Larcker, 1981)

Table 1

Descriptive analysis of constructs

Construct	Item	Standardized factor loading	Weight	t-value (Bootstrap)	CA	CR	AVE
PU	PU1	0.870	0.176	12.83	0.903	0.926	0.678
	PU2	0.852	0.214	14.83			
	PU3	0.877	0.205	16.03			
	PU4	0.850	0.209	15.03			
	PU5	0.712	0.206	14.70			
	PU6	0.766	0.210	13.15			
NB							
	NB1	0.831	0.190	14.03	0.901	0.924	0.670
	NB2	0.841	0.197	12.50			
	NB3	0.836	0.210	15.87			
	NB4	0.784	0.184	9.55			
	NB5	0.810	0.225	12.98			
	NB6	0.806	0.216	15.51			
FC							
	FC1	FC1	0.872	0.311	16.61	0.885	0.921
	FC2	FC2	0.856	0.272	12.10		
	FC3	FC3	0.894	0.286	16.40		
	FC4	FC4	0.827	0.291	13.21		
PIQ							
	PIQ1	0.759	0.194	10.42	0.901	0.924	0.671
	PIQ2	0.873	0.216	18.38			

	PIQ 3	0.842	0.198	15.24			
	PIQ 4	0.811	0.196	12.42			
	PIQ 5	0.855	0.232	16.18			
	PIQ 6	0.769	0.183	10.65			
PBC							
	PBC 1	0.876	0.300	21.84	0.904	0.933	0.776
	PBC 2	0.903	0.280	24.92			
	PBC 3	0.889	0.268	23.46			
	PBC 4	0.856	0.288	20.46			
SN							
	SNI	0.741	0.257	10.64	0.824	0.877	0.587
	SN2	0.731	0.256	13.63			
	SN3	0.770	0.245	13.86			
	SN4	0.820	0.291	13.79			
	SN5	0.767	0.255	12.46			
AT							
	AT1	0.769	0.130	6.40	0.907	0.926	0.680
	AT2	0.815	0.184	11.29			
	AT3	0.884	0.246	15.01			
	AT4	0.912	0.264	15.22			
	AT5	0.893	0.256	14.27			
	AT6	0.644	0.099	3.71			
BP							
	BI2	0.816	0.184	11.48	0.903	0.924	0.635

BI3	0.789	0.182	12.75
BI4	0.661	0.126	6.87
BI5	0.861	0.197	15.98
BI6	0.842	0.177	15.24
BI7	0.825	0.205	13.19

The thumb rule for keeping a formative indicator is to check its loading. If loading is significant, do keep the formative factor in even though if its weight is not significant (Hair et al., 2017). In our case, both the weight and factor loading are above the criterion.

Table 2 highlights the evidence for the discriminant validity of the measures. The variance between pairs of constructs must be less than the corresponding AVE (Fornell & Larcker, 1981). Based on these criteria, the study provided sufficient evidence for reliability, convergent, and discriminant validity.

If variance extracted between the construct is higher than correlations square, it employs discriminant validity is established. The R-square for each construct is less than the AVE value which employs discriminant validity is established.

Table 2.

Correlation analysis of discriminant constructs

	AT	BI	FC	NB	PBC	PIQ	PU	SN
AT	0.825							
BI	0.305	0.797						
FC	0.355	0.273	0.863					
NB	0.361	0.349	0.456	0.818				
PBC	0.288	0.436	0.349	0.388	0.881			
PIQ	0.285	0.422	0.389	0.346	0.497	0.819		
PU	0.315	0.299	0.515	0.548	0.307	0.326	0.823	
SN	0.396	0.477	0.369	0.399	0.430	0.338	0.445	0.766

Note: AT(Attitude), BI (Behavioral Intention),FC (Facilitating conditions), NB (Normative belief), PBC (Perceived behavioral Conditions) PIQ (Perceived Information quality), PU (Perceived Usefulness), SN(Social Norms)

The inner model test outcomes can survey the connection between constructs by contrasting the significance value and the R-Square of the

research model (Ghozali, 2015). The R-Square for endogenous factors is given below in Table 3.

Table 3.
The connection between endogenous and exogenous variables

	R Square	R Square Adjusted
AT	0.193	0.184
BI	0.301	0.295
PBC	0.309	0.301
SN	0.268	0.260

The capability of the exogenous variable to describe endogenous variable rises with the increase in R-value i.e., the higher the R-Square value is, the greater the ability of the exogenous variable in explaining the endogenous variable, hence better the structural equation.

The Bind folding procedure can obtain the Stone-Geysers' (Q^2) values (i.e., cross-validated redundancy measures) using Smart PLS (Wong, 2016; 2019). The evaluation is subsequently conducted to calculate the Q-square predictive relevance, as follows:

Q^2 model 1 = 1- (1- Ry12) (1- Ry22) (1- Ry32) (1-Ry42) era

= 1-(1- 0.193^2) (1- 0.301^2) (1- 0.309^2) (1-0.268^2)

Q^2=1-0.811=0.189

The Q^2 value is above zero which employs that the model designed has predictive relevance (Ghozali, 2015)

Results

Fig 2 and Table 4 summarized the results. Perceived usefulness is found to be significantly positive to social norms. The P-value (0.034) shows that PIQ is significantly associated with AT, which reflects that respondents are highly motivated by the quality of information about the food available in the market. The P-estimation of (0.011) shows that perceived information quality is related to social norms in attaining food security at the family level. There is a solid positive relationship between PIQ and PBC as the noteworthiness level is high with P-esteem at (0.000). This worth shows that the nature of perceived information quality about

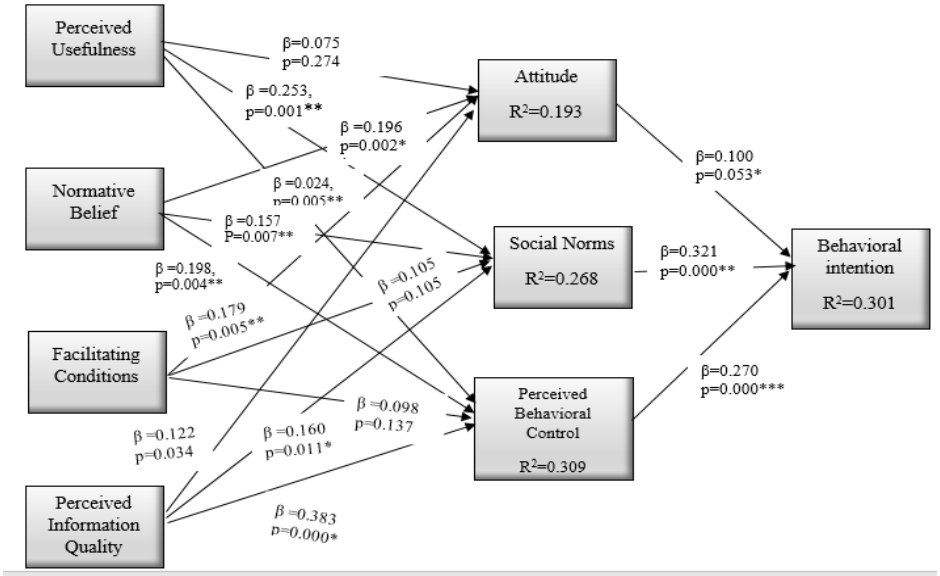
food security impacts apparent perceived behavioral control. The significance value of p=0.007, β=0.157, indicated that the normative belief of respondents is strongly and positively linked with social norms. These results strongly conform to the work of (Ajzen, 1991), who put normative beliefs, as underlying determinants of subjective norms.

The important relationship exists between perceived behavioral control and behavioral plan, as the p-esteem (0.000) is profoundly positive. Social norms are positively associated with behavioral plans as a significant level of (P-value=0.000) indicated a high level of a positive correlation between social norms and behavioral plans.

The results, as provided in Table. 4, did occur as expected. In particular, we see the R-square 0.193 for attitude, 0.309 for perceived behavioral control, 0.268 for social norms, and 0.301 for Behavioral plan. In terms of structural paths to the primary endogenous constructs of Attitude, perceived behavioral control and social norms had the most substantive impact on behavioral Plan.

Figure 3

Conceptual framework depicting relationship between behavioral intention and normative belief



Discussion

This research finds that PU is a driving force for behavior and consequently towards continuance usage plan of the users. Conclusively, outcomes from current research conform with the previous research (Fishbein & Ajzen, 1980) who found that subjective norm, the personal factor, in the theory represents the perceived influence of the social environment and it refers to the social pressure exerted on the person to perform (or not perform) a certain behavior. (Vermeir & Wimverbeke, 2006) appeared in their investigation that reasonable, tolerable, and ethical food consumption could be energized through raising support, PCE, certainty, social standards, and perceived accessibility. De Kervenoae et al., (2020) found that there is a positive relationship between subjective norms and intrinsic motivations and the perceived value of healthier food.

The attitude influences the plan of a person to improve household food security. This confirms the finding of (Hung et al., 2012) who found a similar kind of positive relationship between attitude and behavioral plan. (Matlabi et al., 2018) found a significant correlation between attitude and behavioral plan when he studied the analytical control of the TPB on hypertension in junior-high-school pupils. The relationship between PBC and Behavioral plan is in accordance with the discoveries by (Howell, 2015) who reasoned that perceived behavioral control impacts behavioral plans towards the counter presentation of sea-going obtrusive species. Satiennam et al., (2018) also found that PBC has a significant effect on the plan.

The results show that the intention of respondents to practice food security at the household level is highly influenced by what the community feels or thinks about food security and how people living in a household behave about food security. These discoveries are in accordance with the results of (Fang et al., 2017) who featured a critical degree of way coefficient between social norms and behavior plans at 0.40, in this manner uncovering the help of H5 with visitors social norms affecting their behavioral plan to utilize reusable silverware.

The easygoing connection between normative belief and perceived behavioral control is altogether positive. Ajzen included that the strength of normative belief grew by the person's inspiration to fulfill the referent

in question, and the subjective norm (SN) is legitimately corresponding to the sum of the resulting products of normative belief and person's motivation to comply with the referent in question. There is a noteworthy connection between Attitude and behavioral plan. The p-esteem shows the connection is huge and positive.

There is a significant relationship that exists between normative belief and attitude of respondents in applying food security at the household level. Respondents believe that people living with them influence their decisions regarding food security. They will participate actively in improving food security and eventually affect the attitude of the respondents. These outcomes conform to the discoveries of (Saba & Messina, 2003), who found that individuals emphatically believe that natural food is sound, ecologically friendly, and that's only the tip of the iceberg scrumptious than traditionally developed food sources, and this belief influences the attitude towards organic food decidedly. (Park, 2000) reasoned that the relationship between attitude, behavior, and subjective norms was altogether positive. Facilitating conditions (FC) are usually alluded to as asset factors, for example, time and money, and innovation components concerning similar issues that effects usage. This is supported by a study conducted by Wali et al., (2021) who found that income and landholding as an asset positively contributes toward food security. It is sensible to expect that when every single other thing is equivalent, a goal to utilize and utilization would be more uncertain if less time and money are accessible and as functional similarity diminishes (Taylor & Todd, 1995). The present study found that facilitating conditions available to respondents are significantly favorable to their attitude toward achieving food security. These discoveries accommodate the outcomes where decisively, facilitating conditions positively affect attitude toward PC use (Ngai, 2007).

Non-significant results

The p-value is not significant, indicating that there is no relationship between perceived usefulness and attitude. The p-values are not significant, highlighting there exists no relationship between PU and PBC. There is not a significant relationship between FC and PBC as P-

value=0.137 shows a non-significant link between facilitating conditions with perceived behavioral control. P-value =0.105 shows there is a non-significant association of facilitating conditions with social norms.

Moderator

Results also showed that NSE has no moderator effect on SN, PBC and, AT. This in line with the study reported that participants did not have a firm belief in their capabilities to be stronger to work persistently for better nutritional status (Bandura, 1989). Few studies highlight the importance of self-efficacy as a critical factor in health behavior and nutritional outcome (Matheson et al. 1991; Conn, 1997). Similarly, Self-efficacy seemed less interactive with social norms as concerning culture might inhibit one strive for self-efficacy. This result confirms the results of (Mau, 2000) who found that concerning culture collectively in Chinese may impede the development of self-efficacy.

Table 4.

The Decision for Hypotheses Based on the Relationship of Constructs

	Path Coefficient β	Mean	St. Dev	T-value	P-value
AT -> BI	0.100	0.102	0.051	1.939	0.053
FC -> AT	0.179	0.181	0.064	2.802	0.005
FC -> PBC	0.098	0.099	0.066	1.49	0.137
FC -> SN	0.105	0.104	0.065	1.62	0.105
NB -> AT	0.196	0.196	0.064	3.073	0.002
NB -> PBC	0.198	0.199	0.069	2.869	0.004
NB -> SN	0.157	0.159	0.058	2.721	0.007
PBC -> BI	0.27	0.269	0.067	4.034	0.000
PIQ -> AT	0.122	0.122	0.058	2.118	0.034
PIQ -> PBC	0.383	0.383	0.073	5.28	0.000
PIQ -> SN	0.16	0.163	0.063	2.535	0.011
PU -> AT	0.075	0.074	0.068	1.095	0.274
PU -> PBC	0.024	0.022	0.065	0.364	0.716
PU -> SN	0.253	0.255	0.077	3.294	0.001
SN -> BI	0.321	0.325	0.067	4.771	0.000

Conclusion

This paper investigated the empirical relationship between perceived usefulness, social norms, perceived behavioral control, attitude, and normative belief, facilitating conditions, perceived information quality, nutritional self-efficacy and, behavioral plan towards food security. It was concluded that respondent showed their plan to strive for food security by perceiving its usefulness, taking in mind what social perception is about this phenomenon. Respondents perceived that the quality of information about food is critical before getting food for his or her household. Normative belief is also a part of a respondent's strategy as what one's behavior is very important before getting something done and it is also important because of what people living nearby feel about one's behavior. So, taking all the stakeholders in confidence matters a lot to achieve a particular objective. In addition to affecting the attitude and normative belief of a respondent to perform a certain function to improve food security. Social norms and eventually social pressure contribute to exerting positive pressure on the behavioral intention of a respondent to achieve food security. The study concluded that the behavioral intention of a respondent is also positively linked with the perceived behavior of a particular group towards a specific function. At the end of this study, it was concluded that perceived behavioral control positively affects plans towards food security. Among large numbers of factors, few factors are proved insignificantly associated with other factors, eventually having no effect on the behavioral plan.

The results are not in line with previous studies which showed that there is a non-significant relationship of perceived usefulness with attitude and perceived behavioral control. This may be due to the unavailability of necessary facilities like income, infrastructure, land which proved to be a fundamental requisite for fulfilling one's basic need for food. If someone has a positive attitude towards the usefulness of food security, but he is jobless and has not to land to cultivate crops, his attitude will be insignificant towards the perceived usefulness of food security. While facilitating conditions are less significantly associated with perceived behavioral control and social norms. This gives strength to the notion that human strives for basic needs irrespective of what he understands about a

particular phenomenon. Even in the absence of facilitating conditions, his perception about usefulness, attitude, social demand and, behavioral plan about food security is positive. While moderator effect of nutritional self-security was found insignificant as NSE had a non-significant relationship with PBC, SN and, AT. This concluded that nutritional self-efficacy is not affecting perceived behavioral control, social norms and, attitude towards the behavioral plan. This means that respondents don't consider NSE necessary for their behavioral control or belief about their intention and attitude towards food security.

Practical implications

To finish up, this investigation has added to the information on both scholarly and practical levels. Scholastically, this examination stretches out earlier research that explores respondents' intention to work at food security at the household level. Food security is a complex phenomenon and, it needs comprehensive effort from a household facilitated by the government to achieve food security, as supported by (Dorosh et al., 2009) who concluded that regardless of how well-intention, government intervention, when joined by execution failures or indistinct approach signals, can conceivably bring down local food availability.

This study gives some information about food security in mountain areas which are often neglected in policy agenda and how people in mountain areas can have food security and how government and policymakers can get a sense of poor people's needs and expectations. This conforms to a study by (Anderson et al., 2007) who concluded that there is an urgent job for self-regulatory behavior in the more advantageous nutrition selections for a household. The government should also provide education on nutrition to the people in the study area, so nutritional self-efficacy takes a key position while deciding about food security as reported by (Dollahite, et al., 2003; Sidaner et al., 2013) who stressed the importance of education and resource management skills for food security.

Strengths of the Study

This study was conducted in the area situated on the line of control between two battling neighbors which makes it a more valuable research

effort as exploring facts about food security in this area was a very brave effort. And for the first time, any cross-sectional study was conducted in this area especially when there is a security risk on borders. The strength of this study is bringing the very crucial issue of food security in light and focusing on a neglected area that is mountainous in nature and situated in peripheries and often neglected due to poor infrastructure.

Limitations

The area is situated on the line of control between Pakistan administrative and Indian held Kashmir which is very risky to conduct research activities or other related activities during shelling and firing on line of control. At long last, the intensity of the examination might not have been sufficiently high to distinguish an association between the food security and different constructs used in the study. More research is expected to gauge this link between food security and various constructs of theories used in this study.

References

Ajzen I, (1986), Madden TJ. Prediction of goal-directed behavior: Attitudes, intentions and perceived behavioral control. *J Exp Soc Psychol; 22*(5):453–74.

Ajzen, I, (1980) Fishbein, M. Understanding Attitudes and Predicting Social Behavior. *J. Exp. Soc. Psychol., 22*, 453–474.

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-221

Alkire, S., & Alkire, G. E. I. S. (2002). *Valuing freedoms: Sen's capability approach and poverty reduction*. Oxford University Press, USA.

Anderson, E. S., Winett, R. A., Wojcik, J. R., & Williams, D. M. (2010). Social cognitive mediators of change in group-randomized nutrition and physical activity intervention: social support, self efficacy, outcome expectations and self-regulation in the guide-to health trial. *Journal of health psychology*, *15*(1), 21-32.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1), 74 94.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist*, 37(2), 122.

Bandura A (1989) Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology* 25, 729–735

Chen CC, Schilling LS &Lyder CH (2001) A concept analysis of malnutrition in the elderly. *Journal of Advanced Nursing 36*, 131 142.

Conner, M. (2020). Theory of planned behavior. Handbook of sport psychology, 1-18.

Conn V (1997) Older women: social cognitive theory correlates of health behavior. *Women and Health* 26, 71–85.

Clark, D. A. (2005). The Capability Approach: Its Development, Critiques and Recent Advances.

De Kervenoael, R., Schwob, A., Hasan, R., & Ting, Y. S. (2020). Consumers' perceived value of healthier eating: A SEM analysis of the internalisation of dietary norms considering perceived usefulness, subjective norms, and intrinsic motivations in Singapore. *Journal of Consumer Behaviour*.

Dollahite, J., Olson, C., & Scott-Pierce, M. (2003). The impact of nutrition education on food insecurity among low-income participants in EFNEP. *Family and Consumer Sciences Research Journal, 32*(2), 127-139.

Dorosh, P. A., Dradri, S., & Haggblade, S. (2009). Regional trade, government policy and food security: Recent evidence from Zambia. *Food Policy, 34*(4), 350-366.

Fang, W. T., Ng, E., Wang, C. M., & Hsu, M. L. (2017). Normative beliefs, attitudes, and social norms: People reduce waste as an index of social relationships when spending leisure time. *Sustainability, 9*(10), 1696.

FAO, I., & UNICEF. (2019). World Food Program, WHO. The state of food security and nutrition in the world.

FAO. (1996). Declaration on world food security. World Food Summit, FAO, Rome.

Fornell, C., &Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Ghozali, I., & Latan, H. (2015). Partial Least Squares Concepts, Techniques and Applications Use Smart PLS 3.0.

Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS SEM)* (2 ed.). Thousand Oaks, CA: Sage. ISBN 9781483377445.

Hair, J.F.; Sarstedt, M.; Ringle, C.M.; Gudergan, S.P. (2018). *Advanced Issues in Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage. ISBN 9781483377391.

Hall, E., Chai, W., & Albrecht, J. A. (2016). Relationships between nutrition-related knowledge, self-efficacy, and behavior for fifth grade students attending Title I and non-Title I schools. *Appetite, 96*, 245-253.

Howell, A.P.; Shaw, B.R.; Alvarez, G. (2015). Bait shop owners as opinion leaders: A test of the Theory of Planned Behavior to predict pro environmental outreach behaviors and intentions. *Environ. Behav, 47*, 1107–1126.

Hung, S. Y., Ku, Y. C., &Chien, J. C. (2012). Understanding physicians' acceptance of the Medline system for practicing evidence-based medicine: A decomposed TPB model. *International journal of medical informatics, 81*(2), 130-142.

Kimmitt, J., Muñoz, P., & Newbery, R. (2020). Poverty and the varieties of entrepreneurship in the pursuit of prosperity. *Journal of Business Venturing, 35*(4), 105939.

King, S. C., Meiselman, H. L., & Carr, B. T. (2010). Measuring emotions associated with foods in consumer testing. *Food Quality and Preference, 21*(8), 1114-1116.

Matheson DM, Woolcott DM, Matthews AM & Roth V (1991) Evaluation of a theoretical-model predicting self-efficacy toward nutrition behaviors in the elderly. *Journal of Nutrition Education 23*, 3–9. Mau W (2000).

Matlabi, M., Esmaeili, R., Moshki, M., Ranaei, A., Haji, A., &Mehrabi, R. (2018). The status and predictors of hypertension preventive nutritional behaviors in adolescents based on the constructs of the Theory of Planned Behavior. *Electronic physician*, *10*(1), 6223.

Mau W (2000) Cultural differences in career decision-making styles and self-efficacy. *Journal of Vocational Behavior 57*, 365– 378.

Mogre, V., Aryee, P. A., Stevens, F. C., &Scherpbier, A. J. A. (2017). Future doctors' nutrition-related knowledge, attitudes and self efficacy regarding nutrition care in the general practice setting: a cross-sectional survey. *Medical Science Educator*, *27*(3), 481-488.

Ngai, E. W., Poon, J. K. L., & Chan, Y. H. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers & education*, *48*(2), 250-267.

Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). New York: McGraw-Hill.

Nussbaum, M. (2000). Women's capabilities and social justice. *Journal of human development*, *1*(2), 219-247.

Orbell, S., & Sheeran, P. (1998). Inclined abstainers: A problem for predicting health-related behaviour. *Br. J. Soc. Psychol.* 37, 151–165.

Park, H. S. (2000). Relationships among attitudes and subjective norms: Testing the theory of reasoned action across cultures. *Communication Studies, 51(2), 162–175.*

Planning, A. J. K. (2015). Development Department. Azad Kashmir at a glance.

Richert, J., Reuter, T., Wiedemann, A. U., Lippke, S., Ziegelmann, J., & Schwarzer, R. (2010). Differential effects of planning and self efficacy on fruit and vegetable consumption. *Appetite, 54*(3), 611 614.

Robeyns, I. (2006). The capability approach in practice. *Journal of Political Philosophy*, *14*(3), 351-376.

Saba, A., & Messina, F. (2003). Attitudes towards organic foods and risk/benefit perception associated with pesticides. *Food quality and preference*, *14*(8), 637-645.

Satiennam, W., Satiennam, T., Triyabutra, T., &Rujopakarn, W. (2018). Red light running by young motorcyclists: Factors and beliefs influencing intentions and behavior. *Transportation research part F: traffic psychology and behaviour*, *55*, 234-245.

Sekerdej, M., & Szwed, P. (2021). Perceived self-efficacy facilitates critical reflection on one's own group. *Personality and Individual Differences*, *168*, 110302.

Sen, A. (1999). Commodities and capabilities. *OUP Catalogue*. Sheeran, P.; Webb, T.L. (2016), The Intention–Behavior Gap. Soc. Personal. *Psychol. Compass, 10*, 503–518.

Sidaner, E., Balaban, D., &Burlandy, L. (2013). The Brazilian school feeding programme: an example of an integrated programme in support of food and nutrition security. *Public Health Nutrition*, *16*(6), 989-994.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, *6*(2), 144-176.

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude–behavioral intention" gap. *Journal of Agricultural and Environmental ethics*, *19*(2), 169 194.

Wali, M.Q.K., Alam, A. and Shah, I., 2021. Household Food Security: Determinants and Perceived Challenges in Mountains of Azad Jammu and Kashmir. *Sarhad Journal of Agriculture, 37*(3), pp.957 974.

Walpole, B., Dettmer, E., Morrongiello, B. A., McCrindle, B. W., & Hamilton, J. (2013). Motivational interviewing to enhance self efficacy and promote weight loss in overweight and obese adolescents: a randomized controlled trial. *Journal of pediatric psychology*, *38*(9), 944-953.

Williams, S. L., & French, D. P. (2011). What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behavior—and are they the same?. *Health education research, 26*(2), 308-322.

Wong, K. K. K. (2019). Mastering partial least squares structural equation modeling (PLS-Sem) with Smartpls in 38 Hours.

Young, W.; Hwang, K.; McDonald, S.; Oates, C.J. (2018). Sustainable consumption: Green consumer behaviour when purchasing products. *Sustain. Dev. 2010*, *18*, 20–31.

Received August 21, 2020
Revisions Received November 10, 2021