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# A RESEARCH ON PROBLEMS IN EXISTING DELIVERY PROCESS IN CARGO TRANSPORTATION AND EVALUATION OF NEW METHODS: MALATYA DISTRICT EXAMPLE

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**ABSTRACT**

In this study, a research to determine attitudes of consumers towards new delivery methods such as parcel locker widely used abroad as well as problems encountered during delivery process was conducted. In the research, the effects of problems experienced on new delivery methods and intention of consumers about online shopping were analyzed. İnönü University's academic and administrative staff that have employee profiles all through Malatya were determined to be the research's population. Inonu University Campus Region with its more than 3000 employees was identified to experience intense delivery traffic upon interviews with cargo firms. This intense traffic along with employees from every district of Malatya was evaluated that the determined population has the adequate representability of Malatya city. The relationship between "problems", "attitudes new delivery methods" and "shopping intentions" was investigated in the analysis phase. While ANOVA tests were applying for age, shopping frequency, and educational status, T-tests applied for gender and staff status to measure differences. Test results showed that "shopping intention" vary according to the age, staff status and shopping frequency. Also, age has a significant difference with "attitudes towards new delivery methods".

## 1. INTRODUCTION

All living beings either due to survive first order nutrition, health or for excess requirements over needs are directed to consume products (İşler, et al., 2014). During recent 20 years, the development of computer and information technologies has increased dramatically that the communication between sellers and buyers has differed as well (Genç and Yaşa Özeltürkay, 2015). Since the first online search engine was developed in the beginning of 1990s, internet has become used for trade purpose gradually more often (Turan, 2008). The Word Trade Organization (WTO) defines online trade as the production, marketing, sales and distribution of goods and services through telecommunication networks. As the internet develops in scope and popularity, more and more users are adopting it as a medium for seeking information and shopping online (Farag et al., 2007; Hill and Beatty, 2011; Keisidou et al., 2011). Today electronic trade has a volume of more than 1 trillion dollars worldwide with 1,61 billion users. In Turkey where e-trade users have reached 12 millions and e-trade volume has reached to 20 billion Turkish liras, there are e-trade web sites around 22 thousands (Öztürk, 2018). In 2013, the rate of online shoppers was 24.1% (Özçelik, 2013).

For online shoppers, it is very important to achieve shopping process smoothly and fluently without any problem from the beginning of order replacement to order delivery as perceptual fluency affects both cognitive effort and positive affect experienced during online shopping and cognitive effort and positive affect influence judgments about the perceived decision quality of the choice made (Mosteller, et al, 2014). Online personalization is also very important in terms of customers' preferences, in an attempt to convince the latter to select a certain product or service (Ho and Bodoff, 2014).

Tendencies of consumers towards shopping through internet have been increasing gradually as e-commerce has developed in recent years. Products shipped to consumers through cargo firms in online shopping. The quality of services provided by cargo firms in delivery process can have a significant impact on consumers' satisfaction, hence, problems experienced in this process can be associated to the product, brand and the seller causing an overall dissatisfaction.

## 2. DELIVERY PROCESS IN ONLINE SHOPPING

Products purchased on the internet have to be delivered to the customer and home delivery refers to the delivery process where online purchased items are delivered to one's home address, to another address (at the office, next door or family) or to a pickup point (post office, store or other pickup point) (Visser et al., 2014). Concerns related to home deliveries are from the consumer perspective; not on time, not at home, not delivered, too high delivery charges, too long delivert time and enforcement to stay at home (50%) from the perspective of carriers; additional costs for repented delivery (12% second time for delivery) and non-delivErables (2% of the goods cannot be delivered) (Visser et al., 2014).Another study (Kuriachan, 2014) mentions about problems encountered in deliveries ain online shopping as (a) receiving wrong products, (b) damaging products in transit (c) delay in the delivery of products (d) customer failed to receive the product (e) problems with foreign companies.

The statistics related to problems are provided by a survey in the UK (URL-1). 69% of internet shoppers have suffered some form of problem with their delivery: (i) 38% of people have had a parcel arrive late, (ii) more than one in 10 received damaged items, (iii) more than one in five had a parcel go missing, (iv) 28% had their parcel left in an unsecure location, (v) 28% were at home but had a note through the door saying the parcel could not be delivered.

Apart from home delivery services, automated parcel stations (APS) equipped with lockers, and pick-up points (PP), which are stores providing parcel drop-off and pick-up services, are fast-growing solutions (Morganti, et al., 2014) for potential delivery problems listed above. Pickup points are locations for picking up goods that are ordered by mail or by internet. There are at least two different types of pickup points that can be distinguished: (i) Most common are parcel service points (PSP= staffed pickup points), that can be found in supermarkets and stores, (ii) not so common are pack stations (unmanned pickup points, using lockers).

## 3. METHODOLOGY

This section examines the methodology used in the present study, including research model, hypotheses, sample and questionnaire design.

### 3.1. Research Model and Hypotheses

The model of this study is based on relational search technique to point out potential relationship between selected demographic factors (gender, age, level of education, staff status) and online

shopping experience in terms of deliveries (Karasar, 2015). It is also descriptive and explanatory providing transparency of online-shopping experience, intension and attitudes towards delivery process (Cooper and Schindler, 2014).

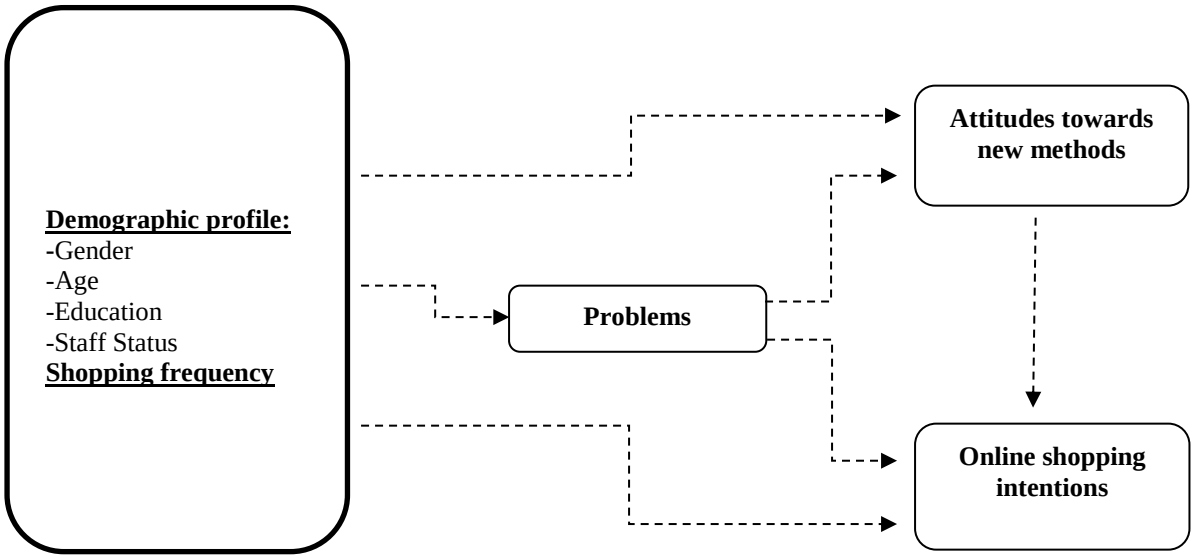


**Figure 1. Diagrammatic representation of the research model**

**In the framework of the research model shown in Figure 1, four main hypotheses are defined.**

**Hypotheses 1: "Problems", "attitudes towards new methods" and "shopping intention" vary according to the personal characteristics of the participants.**

**Hypotheses 2: "Problems", "attitudes towards new methods" and "shopping intention" vary according to shopping frequency.**

**Hypotheses 3: There is a relationship between "problems", "attitudes towards new methods" and "shopping intention".**

**Hypotheses 4: There is a meaningful relationship between "shopping intention" and "attitudes towards new methods" and "problems".**

### 3.2. Sample and Questionnaire Design

The questionnaire was prepared using "Google Forms". An email invitation was sent out to academic and administrative staff working at the Inonu University to complete the online survey questionnaire, which was used in the collection of primary data. The questionnaires were sent to

3000 respondents and out of the total, 223 responses were received. The model was used to measure the relationship between cargo problems, new delivery methods and online purchasing intentions. The survey consists of four sections. First section contained questions about demographic profile with 5 items such as gender, age, level of education, staff status and online shopping frequency. Second section contained judgments about Cargo problems based on 4 dimensions; time (3 items), communication (3 items), convenience (3 items), and quality (3 items). Third section was on judgments about new delivery methods that comprises of 9 items. The last section contained judgments about online purchasing intentions with 5 items. For the last three sections, the respondent's attitude is measured using a five-point Likert scale, ranging from 1 representing "strongly disagree" to 5 representing "strongly agree."

### 3.3. Reliability Analysis

Cronbach's Alpha coefficient was used for reliability analysis. The statistics obtained as a result of the analysis are shown in Table 1.

**Table 1: Reliability statistics**

| | Problems | Attitudes Towards New Methods | Shopping Intentions | Including All Scales |
|---|---|---|---|---|
| Cronbach's Alpha | 0.864 | 0.774 | 0.922 | 0.853 |
| N of Items | 12 | 9 | 5 | 26 |

The Cronbach alpha values show that the reliability of the measuring instrument is quite high both for each scale and overall.

## 4. RESULTS AND DISCUSSIONS

Descriptive statistics for the personal characteristics of the participants are given in Table 2.

**Table 2: Descriptive statistics**

| | | Frequency | % |
|---|---|---|---|
| Gender | Male | 147 | 65.9 |
| | Female | 76 | 34.1 |
| Staff | Academic | 158 | 70.9 |
| | Administrative | 65 | 29.1 |
| Education | High school | 7 | 3.1 |
| | Associate Degree | 16 | 7.2 |
| | Bachelor Degree | 47 | 21.1 |
| | Master | 45 | 20.2 |
| | Doctorate | 108 | 48.4 |
| Age | 20-30 | 49 | 22.0 |
| | 31-40 | 82 | 36.8 |
| | 41-50 | 54 | 24.2 |
| | 51 and over | 38 | 17.0 |

| | | | |
|---|---|---|---|
| Shopping Frequency | Always | 22 | 9.9 |
| | Often | 68 | 30.5 |
| | Sometimes | 73 | 32.7 |
| | Rarely | 43 | 19.3 |
| | Never | 17 | 7.6 |

Among participants, the majority are male (65.9%), academic staff (70.9%), have a Ph. D. degree (48.4%), at the age of between 31 and 40 (36.8%), and do shopping sometimes (32.7%).

**Table 3: Item statistics**

| | Mean | Std. Deviation |
|---|---|---|
| Cargo companies deliver my orders on time. | 3.25 | 1.053 |
| Delivery of my orders can be made on the day and time I set. | 2.70 | 1.109 |
| Delivery of my orders is done at an appropriate time during the day. | 2.99 | 1.149 |
| In the distribution process, informing with the mobile channel is sufficient. | 3.00 | 1.223 |
| There is sufficient informing by phone prior to delivery of the cargo. | 2.61 | 1.247 |
| Where my orders can be tracked. | 3.56 | 1.042 |
| Cargo companies' delivery points are sufficient. | 2.88 | 1.160 |
| I can easily receive my orders | 3.17 | 1.151 |
| I agree that the products in the order should be sent separately without being combined in one cargo. | 2.68 | 1.299 |
| Cargo companies deliver the products without any damage. | 3.44 | .998 |
| I do not have any problem with the cargo workers about not receiving the damaged products. | 3.01 | 1.125 |
| I generally find that the behavior of cargo employees is positive. | 3.41 | 1.082 |
| Products must be received through locked boxes at certain points. | 3.50 | 1.215 |
| Products can be received 24/7. | 3.84 | 1.123 |
| There should be an option to receive products from the branch I want. | 4.25 | .884 |
| There should be an option to receive products with the Drone technology. | 3.34 | 1.252 |
| There should be an option to receive products from the branch. | 4.02 | .939 |
| Online shopping sites should have the option to deliver products from the store. | 4.07 | 1.035 |
| There should be delivery option on the day and time determined in online shopping sites. | 4.29 | .920 |
| There should be an alternative person or address delivery option in holiday etc. situations. | 4.42 | .766 |
| Products should be monitored with GPS system. | 4.34 | .770 |
| I am happy to be shopping on the internet. | 3.79 | 1.049 |
| I plan to continue shopping online. | 3.92 | 1.023 |
| I plan to do more shopping over the internet. | 3.39 | 1.165 |
| I think that I will meet all my needs as much as possible on the internet. | 3.16 | 1.233 |
| I would recommend shopping online to my friends. | 3.38 | 1.194 |

According to item statistics, the participants agreed the most with the need for alternative delivery option ($\bar{X}$ = 4.42), monitoring products with GPS ($\bar{X}$ = 4.34), and delivery option consisting with online shopping site ($\bar{X}$ = 4.29), The least agreed items are sufficient information prior to delivery ($\bar{X}$ = 2,61), separate shipments ($\bar{X}$ = 2.68), and on time delivery ($\bar{X}$ = 2.70).

**Hypotheses 1: "Problems", "attitudes towards new methods" and "shopping intention" vary according to the personal characteristics of the participants.**

Sub-hypotheses were formed by taking into account the variables of gender, age, education and personnel status within personal characteristics. In order to test the sub-hypothesis, Anova and T-tests were performed and the ratios are as shown in the following tables.

**Table 4: ANOVA test results for age**

| ANOVA | | | | | |
|---|---|---|---|---|---|
| | | Sum of Squares | Mean Square | F | Sig. |
| Time | Between Groups | 1.796 | .599 | .689 | .560 |
| | Within Groups | 190.329 | .869 | | |
| | Total | 192.125 | | | |
| Communication | Between Groups | 3.121 | 1.040 | 1.162 | .325 |
| | Within Groups | 196.086 | .895 | | |
| | Total | 199.207 | | | |
| Convenience | Between Groups | 4.327 | 1.442 | 1.918 | .128 |
| | Within Groups | 164.664 | .752 | | |
| | Total | 168.991 | | | |
| Quality | Between Groups | 2.545 | .848 | 1.324 | .267 |
| | Within Groups | 140.340 | .641 | | |
| | Total | 142.885 | | | |
| Problems (All dimensions) | Between Groups | 1.956 | .652 | 1.256 | .290 |
| | Within Groups | 113.683 | .519 | | |
| | Total | 115.639 | | | |
| Attitudes towards new delivery methods | Between Groups | 4.355 | 1.452 | 4.227 | .006 |
| | Within Groups | 75.217 | .343 | | |
| | Total | 79.572 | | | |
| Shopping intention | Between Groups | 9.771 | 3.257 | 3.420 | .018 |
| | Within Groups | 208.532 | .952 | | |
| | Total | 218.303 | | | |

"Problems", "attitudes towards new methods" and "shopping intention" do not vary according to gender. Variance homogeneity test results are examined because ANOVA test sigma values are less than 0.05 for "shopping intention" and "attitudes towards new delivery methods". Since the sigma results in the homogeneity of variance test are greater than 0.05, the differences in the Post-Hoc test are evaluated by the Schaffe results.

**Table 5: Schaffe test results for age**

| MULTIPLE COMPARISON | | | | |
|---|---|---|---|---|
| Dependent Variable | (I) age range | (J) age range | Std. Error | Sig. |
| Attitudes towards new delivery methods (Scheffe) | 20-30 | 31-40 | .10582 | .848 |
| | | 41-50 | .11563 | .312 |
| | | 51 and over | .12668 | .013 |
| | 31-40 | 20-30 | .10582 | .848 |
| | | 41-50 | .10271 | .693 |
| | | 51 and over | .11501 | .049 |

| | | | | | |
|---|---|---|---|---|---|
| | | | 20-30 | .11563 | .312 |
| | | 41-50 | 31-40 | .10271 | .693 |
| | | | 51 and over | .12409 | .456 |
| | | | 20-30 | .12668 | .013 |
| | | 51 and over | 31-40 | .11501 | .049 |
| | | | 41-50 | .12409 | .456 |
| | Scheffe | | 31-40 | .17620 | 1.000 |
| | | 20-30 | 41-50 | .19253 | .992 |
| | | | 51 and over | .21093 | .064 |
| | | | 20-30 | .17620 | 1.000 |
| | | 31-40 | 41-50 | .17101 | .991 |
| | | | 51 and over | .19149 | .034 |
| Shopping intention | | | 20-30 | .19253 | .992 |
| | | 41-50 | 31-40 | .17101 | .991 |
| | | | 51 and over | .20662 | .107 |
| | | | 20-30 | .21093 | .064 |
| | | 51 and over | 31-40 | .19149 | .034 |
| | | | 41-50 | .20662 | .107 |

*The mean difference is significant at the 0.05 level.

When table 5 is examined, it shows a significant difference between participants aged between "51 and over" and "40- 20" age group (sig. value = 0.013 < p = 0.05 for 20-30; sig. value = 0.049 < p = 0.05 for 31-40), in "attitudes towards new methods". Also there is a significant difference between participants aged between "51 and over" and "31- 40" age group (sig. value = 0.034 < p = 0.05) in "shopping intention".

**Table 6: ANOVA test results for educational status**

| ANOVA | | | | | |
|---|---|---|---|---|---|
| | | Sum of Squares | Mean Square | F | Sig. |
| Time | Between Groups | 1.125 | 281 | .321 | .864 |
| | Within Groups | 191.000 | .876 | | |
| | Total | 192.125 | | | |
| Communication | Between Groups | 1.563 | .391 | .431 | .786 |
| | Within Groups | 197.644 | .907 | | |
| | Total | 199.207 | | | |
| Convenience | Between Groups | 2.379 | .595 | .778 | .540 |
| | Within Groups | 166.612 | .764 | | |
| | Total | 168.991 | | | |
| Quality | Between Groups | 2.807 | .702 | 1.092 | .361 |
| | Within Groups | 140.078 | .643 | | |
| | Total | 142.885 | | | |
| Problems (All dimensions) | Between Groups | 1.099 | .275 | .523 | .719 |
| | Within Groups | 114.540 | .525 | | |
| | Total | 115.639 | | | |
| Attitudes towards new delivery methods | Between Groups | 2.295 | .574 | 1.618 | .171 |
| | Within Groups | 77.278 | .354 | | |

| | | | | | |
|---|---|---|---|---|---|
| | Total | 79.572 | | | |
| | Between Groups | 14.963 | 3.741 | 4.010 | .004 |
| Shopping intention | Within Groups | 203.340 | .933 | | |
| | Total | 218.303 | .281 | | |

Variance homogeneity test results are examined because ANOVA test sigma values are less than 0.05 for "shopping intention". Since the sigma result in the homogeneity of variance test is greater than 0.05, the differences in the Post-Hoc test are evaluated by the Schaffe results.

**Table 7: Schaffe test result for educational status**

| MULTIPLE COMPARISON | | | | | |
|---|---|---|---|---|---|
| Dependent Variable | | (I) educational status | (J) educational status | Std. Error | Sig. |
| Shopping intention | Scheffe | high school | associate's degree | .43766 | .816 |
| | | | bachelor's degree | .39127 | .621 |
| | | | master's degree | .39240 | .167 |
| | | | doctor's degree | .37668 | . 087 |
| | | associate's degree | high school | .43766 | .816 |
| | | | bachelor's degree | .27954 | .999 |
| | | | master's degree | .28111 | .622 |
| | | | doctor's degree | .25872 | .374 |
| | | bachelor's degree | high school | .39127 | .621 |
| | | | associate's degree | .27954 | .999 |
| | | | master's degree | .20143 | .507 |
| | | | doctor's degree | .16877 | .142 |
| | | master's degree | high school | .39240 | .167 |
| | | | associate's degree | .28111 | .622 |
| | | | bachelor's degree | .20143 | .507 |
| | | | doctor's degree | .17136 | .995 |
| | | doctor's degree | high school | .37668 | .087 |
| | | | associate's degree | .25872 | .374 |
| | | | bachelor's degree | .16877 | .142 |
| | | | master's degree | .17136 | .995 |

Since all sigma values are greater than 0.05 in the Schaffe test, no clear distinction can be made about the source of the difference. However, when the averages are examined, it is seen that there is a difference between high school and Ph. D. degrees.

**Table 8: T test results for staff status**

| INDEPENDENT SAMPLE TEST | | | | | | |
|---|---|---|---|---|---|---|
| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
| | | F | Sig. | t | df | Sig. (2-tailed) |
| Time | Equal variances assumed | .652 | .420 | -.057 | 221 | .955 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Equal variances not assumed | | | -.056 | 116.022 | .955 |
| Communication | Equal variances assumed | 3.526 | .062 | .507 | 221 | .613 |
| | Equal variances not assumed | | | .546 | 142.003 | .586 |
| Convenience | Equal variances assumed | 3.116 | .079 | -.332 | 221 | .740 |
| | Equal variances not assumed | | | -.350 | 134.959 | .727 |
| Quality | Equal variances assumed | .038 | .845 | 2.114 | 221 | .036 |
| | Equal variances not assumed | | | 2.153 | 124.220 | .033 |
| Problems (All dimensions) | Equal variances assumed | 3.000 | .085 | .630 | 221 | .530 |
| | Equal variances not assumed | | | .668 | 136.707 | .505 |
| Attitudes towards new delivery methods | Equal variances assumed | 3.265 | .072 | 1.717 | 221 | .087 |
| | Equal variances not assumed | | | 1.533 | 95.786 | .128 |
| Shopping intention | Equal variances assumed | .726 | .395 | 3.197 | 221 | .002 |
| | Equal variances not assumed | | | 3.156 | 116.040 | .002 |

Independent sample tests results in table 8 shows the correlation of the independent variable ( quality and shopping intention) is significant at 0.05 levels, two tailed towards dependent variable ( staff status).

**Hypotheses 2: "Problems", "attitudes towards new methods" and "shopping intention" vary according to "shopping frequency".**

Anova test was used to test this hypothesis and rates are as shown in the table.

**Table 9: ANOVA test results for shopping frequency**

| ANOVA | | | | | |
|---|---|---|---|---|---|
| | | Sum of Squares | Mean Square | F | Sig. |
| Time | Between Groups | 1.796 | .599 | .689 | .560 |
| | Within Groups | 190.329 | .869 | | |
| | Total | 192,125 | | | |
| Communication | Between Groups | 3.121 | 1.040 | 1.162 | .325 |
| | Within Groups | 196.086 | .895 | | |
| | Total | 199.207 | | | |
| Convenience | Between Groups | 4.327 | 1.442 | 1.918 | .128 |
| | Within Groups | 164.664 | .752 | | |
| | Total | 168.991 | | | |
| Quality | Between Groups | 2.545 | .848 | 1.324 | .267 |

| | | | | | |
|---|---|---|---|---|---|
| | Within Groups | 140.340 | .641 | | |
| | Total | 142.885 | | | |
| Problems (All dimensions) | Between Groups | 1.956 | .652 | 1.256 | .290 |
| | Within Groups | 113.683 | .519 | | |
| | Total | 115.639 | | | |
| Attitudes towards new delivery methods | Between Groups | 4.355 | 1.452 | 4.227 | .006 |
| | Within Groups | 75.217 | .343 | | |
| | Total | 79.572 | | | |
| Shopping intention | Between Groups | 9.771 | 3.257 | 3.420 | .018 |
| | Within Groups | 208.532 | .952 | | |
| | Total | 218.303 | | | |

Variance homogeneity test results are examined because ANOVA test sigma values are less than 0.05 for "shopping intention" and "attitudes towards new delivery methods". Since the sigma result in the homogeneity of variance test is less than 0.05, the differences in the Post-Hoc test are evaluated by the Tamhane results for shoping intensions.

**Table 10: Tamhane test results for shopping frequency**

| MULTIPLE COMPARISON | | | | | |
|---|---|---|---|---|---|
| Dependent Variable | | Shopping frequency | Shopping frequency | Std. Error | Sig. |
| Shopping intention | Tamhane | always | often | .18895 | .910 |
| | | | sometimes | .18613 | .004 |
| | | | rarely | .20983 | .000 |
| | | | never | .39080 | .001 |
| | | often | always | .18895 | .910 |
| | | | sometimes | .12735 | .001 |
| | | | rarely | .16000 | .000 |
| | | | never | .36646 | .003 |
| | | sometimes | always | .18613 | .004 |
| | | | often | .12735 | .001 |
| | | | rarely | .15666 | .014 |
| | | | never | .36502 | .063 |
| | | rarely | always | .20983 | .000 |
| | | | often | .16000 | .000 |
| | | | sometimes | .15666 | .014 |
| | | | never | .37765 | .739 |
| | | never | always | .39080 | .001 |
| | | | often | .36646 | .003 |
| | | | sometimes | .36502 | .063 |
| | | | rarely | .37765 | .739 |

*The mean difference is significant at the 0.05 level.

Tamhane results in table 10 shows a significant difference between participants who make always shopping online and sometimes ( sig. value = 0.004< α = 0.05), rarely ( sig. value = 0.000< α = 0.05), never ( sig. value = 0.001< α = 0.05) shopping online in "shopping intention".

**Hypotheses 3: There is a relationship between "problems", "attitudes towards new methods" and "shopping intention".**

In order to test this hypothesis, Correlation test was performed and the ratios are as shown in the following table.

**Table 11: Correlation results**

| Correlations | | | | |
|---|---|---|---|---|
| | | Problems | Attitudes towards new delivery methods | Shopping intention |
| Problems | Pearson Correlation | 1 | | |
| | Sig. (2-tailed) | | | |
| Attitudes towards new delivery methods | Pearson Correlation | .096 | 1 | |
| | Sig. (2-tailed) | .153 | | |
| Shopping intention | Pearson Correlation | .209** | .319** | 1 |
| | Sig. (2-tailed) | .002 | .000 | |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | |

The results and significance of Pearson correlation analysis are reported in Table 11. All three variables were positively and significantly correlated.

"Attitudes new delivery methods" was associated with a higher likelihood to "shopping intention" with a significant Pearson correlation coefficient of 0.319 ($p < 0.001$). Higher "attitudes new delivery methods" was associated with a higher likelihood that an individual would choose to shop online.

"Problems" was associated with a higher likelihood to "shopping intention" with a significant Pearson correlation coefficient of 0.209 ($p < 0.001$). Higher "problems" was associated with a higher likelihood that an individual would choose to shop online.

**Hypotheses 4: There is a meaningful relationship between "shopping intention" and "attitudes towards new methods" and "problems".**

Multiple regression analysis was used to test the hypothesis 4. Regression analysis results and rates are as shown in the following tables.

**Table 12: Multiple regression analysis ANOVA results**

| ANOVA[a] | | | | | |
|---|---|---|---|---|---|
| Model | | Sum of Squares | Mean Square | F | Sig. |
| 1 | Regression | 29.165 | 14.582 | 16.962 | .000[b] |
| | Residual | 189.138 | .860 | | |
| | Total | 218.303 | | | |
| a. Dependent Variable: Shopping intention | | | | | |
| b. Predictors: (Constant), Attitudes towards new methods, Problems | | | | | |

The regression results in Table 12 support the hypotheses and indicate that “problems” and “attitudes new delivery methods” influence “shopping intention”.

**Table 13: Multiple regression analysis model summary**

| MODEL SUMMARY | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .366[a] | .134 | .126 | .92721 |

a. Predictors: (Constant), Attitudes towards new methods, Problems

The Adjusted $R^2$ for the overall model was 0.126 in Table 13. “Shopping intention” was significantly and positively correlated with the independent variable “attitudes towards new delivery methods”. “Shopping intention” was significantly and positively correlated with the independent variable “problems”.

## 5. CONCLUSIONS

The development of cargo transportation is a very important issue for both e-commerce enterprises and consumers. Inadequate existing delivery methods, especially the problems experienced in the delivery process, are the biggest obstacles to development. Therefore, determining the problems in the delivery processes and measuring the perception of consumers about new methods constitute the main subject of this study.

The research was carried out in İnönü University Campus Area, which was found to have experienced intense delivery traffic. The data were collected from academic and administrative staff. The data were analyzed by SPSS statistical software program through the descriptive statistics, ANOVA tests, T-tests, the correlation analysis (Pearson) and multiple regression test. As a result of the analyzes, it was determined that there is meaningful differences in the “Problems”, “Attitudes towards new methods” and “Shopping intention” according to the gender, age, stuff status, education and shopping frequency. Another result is that “shopping intention” was significantly and positively correlated with the independent variables “attitudes toward new delivery methods” and “problems”.

According to the results of the research, it can be said that shopping intentions will increase by reducing the problems in the delivery processes. In addition, it is possible to make an assessment that the application of new methods in the delivery processes will increase the shopping intentions of the consumers.

The results of the study are extremely important in the evaluation of Bukoli sample. The reasons why the application of unsuccessful Bukoli parcel locker, which is applied only in Istanbul, should be examined in detail (URL-2; URL-3; URL-4). Considering the results of this research, it can be considered that the Bukoli sample tried as a new method in our country is favored by the consumer but fails because the e-commerce enterprises do not give enough support.

Finally, it is possible to say that enterprises should be more determined and new consumers should be more willing to try new methods. Thus, it will be ensured that the shopping intensions will be increased by ensuring that the consumers receive higher quality services.

A broader study in different regions and with different participant profiles has been identified as the future work topic.

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