

# Consumer innovativeness: Are Indonesian consumers' first adopters or risk seekers?

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# Consumer innovativeness: Are Indonesian consumers' first adopters or risk seekers?

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**Abstract.** The speed of new product adoption and the level of risk tolerance are important features of the consumer innovativeness level. This study aims to examine the demographic factors of Indonesian consumers in relation to differences in consumer innovativeness, perceived risk, and innovation adoption as well as the trend towards consumer innovativeness in perceived risk, and the adoption of innovation among Indonesian consumers. This study is a causal comparative research. This study took 1000 samples of Indonesian consumers from various provinces and tribes, which were taken based on online and offline survey. Data were analyzed using MANOVA and Discriminant Analysis. The results showed that in general the demographic factors of Indonesian consumers leaned toward consumer innovativeness and perceived risk because more than eight out of ten demographic aspects distinguished the two variables compared to innovation adoption. This research shows that consumer innovators tend to be men, have the courage to take credit risks, are young, have high income, and are married. The results of this study are useful for marketers to focus more on their target market, especially on the diffusion of innovation and product introduction stages.

**Keywords:** Innovativeness, consumer, risk, adoption, new product, demographic

## 1 Introduction

The study of consumer innovativeness is a study to identify influencing factors, namely personal factors-demographic, social characteristics and personality traits [1]. Demographic factor intervention research is usually associated with one of the three factors, namely consumer innovativeness, adoption of innovation, and perceived risk or risk tolerance. Some examples of the relationship between demographic factors and consumer innovativeness involves difficulties to decide [2], cosmopolitanism [3], attitude [4], perception [5], and willingness to buy [6].

Demographic factors are also associated with the adoption of new products. Innovativeness refers to consumers' tendency to adopt new products earlier [7]; [8]. For example, adoption of innovation is negatively associated with existing products and positively with decision making for high tech products for all of which depend on demographic characteristics [9]. Other research link demographics with e-payment adoption [10] [11] and with product luxuries [12]. Separately, demographic factors are associated with perceived risk. Researches link demographics to the risk of using a credit card [13] [14] [15]; on personal loans [16]; on the capital market [17].

Based on the argument that most of the research links demographic factors with one of the three variables of adoption of innovation, perceived risk, and consumer innovativeness, this study aims to examine the effect of demographic factors on the differences in these three variables at once. This is based on previous empirical research that innovators with a high level of consumer innovativeness are also risk takers, opinion leaders, and novelty seekers [18].

Consumer innovativeness is a set of consumer personality traits which include the speed of adopting new product innovations, being tolerant of risks, and related to demographic factors [19]. Demographic factors are the key factors in consumer innovation which was measured in terms of reluctance and consumers' efficiency for new products and varies substantially by product category and demographics [20].

In the extraction of a lot of research, consumer innovativeness is related to the speed of adopting new product innovations and perceived risk. Uncertainty, which is a consequence of purchases, encourages consumers to manage their risk in exchanges [21]. Consumers who have the characteristics of consumer innovativeness are consumers who dare to take risks, because perceived risk is a function of uncertainty and the consequences of purchasing [22]. Meanwhile, consumers who are the first to adopt an innovation can be described as innovators [23] [24].

Based on these arguments, it is necessary to see how demographic factors differentiate the personality traits of Indonesian consumers in terms of innovativeness, new product adoption, and perceived risk. This research will also

examine how consumer innovativeness determines the tendency of Indonesian consumers to connect with innovations, new products, and their risks.

This research was conducted in the context of Indonesian consumers, a country with a large consumer market. Research on consumer innovativeness and demographic factors is mostly associated only with financial risk. Many studies in Indonesia link demography with risk tolerance, especially in capital market investment. For example, the research suggests that the influence of demographic factors should not only be seen in the context of one type of market [25] [26] [27] [28].

In several studies, the demographic aspect distinguishes the level or preference of innovation adoption, consumer innovativeness, and perceived risk. Some examples of the results are as follows. Demographic characteristics, namely age, education, and income affect the level of risk tolerance [29] [30] [31]. Based on previous research demographic factors is inherent in risk aversion [32]. Consumer Innovativeness has a positive correlation with income, education, and marital status [33]. Gender, age and education influence the desire to buy products that are specific to demographics [34]. Women and the less educated are suspected to have weaknesses in willing to adopt technology [35]. However, consumer innovators are more likely to be female [36]. Meanwhile, gender and age are not related to consumer innovator [37].

Ha1 : Demographic factors (gender, age, married status, role/status in a family, level of income, education level, occupation type, social class, and origin tribe) affect the difference in consumer innovativeness, risk perceived, and adoption of innovation.

Innovative consumers, who tend to be influencers of other consumers, have different styles, pay attention to the latest trends in products and services, tend to be leaders in their peer groups, have a higher propensity to be brand loyal, price-oriented and stylish [38] [39]). The more the consumer is innovative and modernist, the more willingness he has to accept, purchase, and use a new product [40].

The adoption of innovation is related to the characteristics of consumer innovativeness. Innovation attributes and adopter characteristics are determinants of innovation adoption [41]. Innovators consumers have tendency to purchase new products and are motivated to adopt new products [42] [43] and heavy users and more frequently uses new products and technologies [44] [45]). The impetus for this tendency is due to personality traits, namely the desire to improve social status and opinion leadership [46].

Adoption contains the meaning of behavior which are the speed of adoption and expenditure [47]. Most of the international research shows that innovative consumers tend to adopt new products earlier than consumers who are less innovative [48] [49] [50] [51] [52][53]. Consumers who are less innovative will consider many aspects of product attributes before purchasing a new product [54].

Innovative consumers and new adopters also have the characteristic of being more willing to take risks in purchasing decisions. In many studies, consumer innovators have the characteristic of being tolerant of risk [55] [56] [57] [58] [59]) and tend to be more risk seekers and are able to manage functional risk [60]. Consumers who are risk seekers have a higher level of perceived risk so they have a lower desire to choose credit purchase decisions and use of credit cards [61].

Ha2: Consumer innovativeness affects the preference of perceived risk and adoption of innovation.

15 This research is useful for marketing especially the point that adoption of new products is important to consider consumer innovativeness and perceived risk. The adoption of new products is associated with demographic aspects because consumers are not homogeneous within each demographic [62]. Most practitioners view continual new-product launches as an advantage, targeting innovative consumers who are willing to deal with the risks and uncertainties associated with new products [63]. Understanding the consumer innovativeness level will help marketers create the right strategy for new product innovation.

## 2. Methods

The type of research applied in this study is comparative research. Samples were taken from Indonesian consumers which reached 1000 people who are older than 17 years. Samples were taken by accidental sampling from all provinces in Indonesia. From 34 provinces in Indonesia, respondents who filled out the questionnaire came from

27 provinces. Researchers used research networks to distribute questionnaires, both online and offline. Questions on the questionnaire with closed answer choices with a measurement scale using a 5-point Likert scale. The variables in this study were consumer innovativeness, perceived risk, and innovation adoption. Meanwhile demographic aspects were developed from a study [64] which shows that demographic variables are: sex/gender, age, marital status, family status / role, tribe, education, income, occupation, and social class.

The indicator for the three variables was developed by the researcher because the definition of the measurement of consumer innovativeness has many versions and lacks consensus [65] [66] [67]. The following are indicators of the three variables:

**Table 1.** Indicators of variables

Indicators	Source
<b>Consumer Innovativeness</b>	
1. Inside orientation and independent from the norms of the belonging group; more liberal, self-value driven and no conflict of interest	[68], [69], [70], [71], [72], [73], [74], [75], [76], [77], [78], [79]
2. Open to inputs	
3. Less dogmatic can be vastly understood, but innovative consumers has a character of irerespective of their cultural origins.	
4. Logical, critical thinking, and rational	
5. Ease of information access and media proneness	
6. Autonomy in innovative decision, especially in Indonesia concepts: 'Gemi, nastiti, <i>ah-ati</i> ' (frugal, thorough, careful in money management)	
7. Shopping using internet, reflects their acceptance of technology, innovation, and modern lifestyle	
8. Willingness to give advice, responsibility, and proactivity	
9. Positive attitude	
<b>Perceived Risk</b>	
1. Courage to take risks, risk tolerant	[80], [81], [82], [83], [84], [85], [86]
2. Open to credit offers	
3. Openness, enthusiasm and reluctance, lively	
4. Thinking and acting conservatively/traditionally	
5. Easily adapts	
<b>New product adoption</b>	
1. Enjoys novelty for either hedonic or social reasons, opinion leadership	[87], [88], [89], [90], [91], [92], [93], [94]
2. Being the first in buying new products	
3. Hedonic (bragging of ownership) <ul style="list-style-type: none"> <li>• Shops in many stores for variety of products-variety seeking</li> </ul>	
4. Being the first in buying new products <ul style="list-style-type: none"> <li>• Perceived as exciting when buying a new product</li> </ul>	
5. Being the first in buying new products (Possesses knowledge of product and actively seeks more info)	

Source: Authors' own research.

The first hypothesis is hypotheses on the correlation and difference of each demographic variable with consumer innovativeness, risk perceived, and adoption of innovation. Those matters are related to the problem on how Indonesian consumers behave innovatively in adopting new product. Hypothesis was tested with Multivariate Analysis of Variance (MANOVA) for demographic variables with more than 2 categories, and Analysis of Variance (ANOVA) for demographic variables with 2 categories.

The second hypothesis is a hypothesis on the effects of consumer innovativeness of Indonesian consumer on risk perceived and adoption of innovation. The hypothesis was tested with Discriminant Analysis. Dependent variables, which are perception on credit-purchase risk and adoption of innovation, were converted into a dichotomy scale beforehand and categorized answers into points, where 1-3 means No (less innovative) and 4-5 means Yes (Innovative).

### 3. Results and discussions

#### 3.1 Results

Instrument validity test was done using Spearman Brown Correlation. Results showed that each item were significant on  $\alpha$  level of 0.05. The reliability test used the Cronbach Alpha and all items were found reliable on  $\alpha = 0.05$ .

Based on descriptive data of demographic variables, male respondents were 44% and the rest (56%) were female. Based on age, most of the respondents were under 35 (58%) and the rest were more than 36 years old. Respondents who were married were 58%, with the status of husband as much as 29% and wife as much as 28%. The rest (43%) have children and other statuses.

From the respondent groups based on social class, which was determined from the components of education, occupation, and income, it was found that most of the respondents' education was from high school to undergraduate (72.5%), with income between IDR 2.4 million - 7.2 million (49.4%) and  $\leq$  IDR 2.4 million (32.4%). Based on job classification, 39% are employees, professionals, and middle managers; 31.9% unemployed including housewives. Based on these three categories, the largest social class group is the lower class (56.8%) and the middle class (40.7%).

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#### 3.1.1 The result of MANOVA test for hypothesis 1

The results of the ANOVA and MANOVA tests to answer Hypothesis 1 are described in the following table.

**Table 2.** MANOVA and ANOVA test

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig
Sex/gender	Consumer Innovativeness	107.377	1	107.377	3.352	.067
	Perceived risk	100.646	1	100.646	14.318	.000
	New product adoption	.099	1	.099	.007	.934
Age	Consumer Innovativeness	879.097	4	219.774	7.045	.000
	Perceived risk	229.152	4	57.288	8.313	.000
	New product adoption	92.110	4	23.027	1.598	.173
Married Status	Consumer Innovativeness	683.021	2	341.511	10.900	.000
	Perceived risk	267.072	2	133.536	19.555	.000
	New product adoption	2.683	2	1.341	.093	.912
Status in Family	Consumer Innovativeness	720.433	3	240.144	7.688	.000
	Perceived risk	332.983	3	110.994	16.371	.000
	New product adoption	60.830	3	20.277	1.406	.240
Income	Consumer Innovativeness	868.967	9	96.552	3.128	.001
	Perceived risk	158.936	9	17.660	2.557	.007
	New product adoption	142.654	9	15.850	1.096	.363
Education	Consumer Innovativeness	679.458	8	84.932	2.692	.006
	Perceived risk	361.050	8	45.131	6.686	.000
	New product adoption	514.623	8	64.328	4.585	.000

Occupation	Consumer Innovativeness	1375.854	9	152.873	5.017	.000
	Perceived risk	716.724	9	79.636	12.609	.000
	New product adoption	436.580	9	48.509	3.428	.000
Social Class	Consumer Innovativeness	768.302	2	384.151	11.783	.000
	Perceived risk	306.529	2	153.264	22.251	.000
	New product adoption	166.848	2	83.424	5.838	.003
Tribe	Consumer Innovativeness	3218.221	41	78.493	2.766	.000
	Perceived risk	768.617	41	18.747	2.943	.000
	New product adoption	1339.066	41	32.660	2.426	.000
Javanese/non	<b>Consumer Innovativeness</b>	<b>161.554</b>	<b>2</b>	<b>80.777</b>	<b>2.640</b>	<b>.072</b>
Javanese	<b>Perceived risk</b>	<b>21.522</b>	<b>2</b>	<b>10.761</b>	<b>1.551</b>	<b>.213</b>
	New product adoption	337.040	2	168.520	12.034	.000

Source: Authors' own research.

Consumer innovativeness is differentiated according to age, married status, family status/role, income, education level, social class and tribe (F sig <0.05) but does not differ significantly on sex/gender and Javanese/non-Javanese ethnic groups (F sig > 0.05). Perceived risk is differentiated according to sex/gender, age, married status, family status/role, income, education level, occupation, social class, and tribe (F sig <0.05), but it is not differentiated according to the division of Javanese and non-Javanese tribes (F = 0.213, F sig > 0.05). Adoption of innovation is not differentiated according to sex / gender, age, married status, family status / role, level of income (Sig F > 0.05), but is significantly differentiated according to education, occupation, social class, tribe and Javanese/non-Javanese categorization (Sig F <0.05).

The results of this study indicate that there is no influence between gender and consumer innovativeness and innovation adoption (p-value > 0.05), but gender distinguishes perceived risk (F = 14.318, Sig = 0.000). The ANOVA test results show that male consumers have a higher mean consumer innovativeness and perceived purchasing credit-risk than women. This means that male consumers are more courageous in the financial risk of buying on credit. Age significantly differentiates consumer innovativeness (F = 7.045, sig = 0.000) and perceived risk (F = 8.313, sig = 0.000), but does not differentiate between adoption of innovation (F = 1.598, Sig = 0.173).

There is a correlation between marital status with consumer innovativeness and perceived risk (p-value <0.05), while innovation adoption does not differ (Sig = 0.173, p = value > 0.05). In general, married status has a higher mean than unmarried status. The role status in the family significantly differentiates consumer innovativeness (F = 7.688, Sig = 0.000) and perceived risk (F = 16.371, Sig = 0.000), but does not differentiate between adoption of innovation (F = 1.406, Sig = 0.729). From the post hoc Bonferroni test on family status, it is known that husband and wife status have a higher mean of consumer innovativeness and perceived risk compared to consumers who are children.

There is an influence/relationship between ethnicity and consumer innovativeness, perceived risk, and innovation adoption (p-value <0.05). The term significantly differentiates consumer innovativeness (F = 2.766, Sig = 0.000); distinguishing perceived risk (F = 2.943, Sig = 0.000); and adoption of innovation (F = 2.426, Sig = 0.000). However, specifically in the Java vs non-Java group, there was no difference between consumer innovativeness and perceived risk (p-value > 0.05). Categorization of Javanese and non-Javanese can significantly differentiate the adoption of innovation (F = 12.034, Sig = 0.000). From the ANOVA test, the mean value for innovation adoption for non-Javanese is higher than for Javanese.

There was a correlation between social class factors, which are education, occupation and income with consumer innovativeness, perceived risk, and adoption innovation (p-value < 0.05). Partially, innovation adoption is not different based on income level (Sig = 0.363, p-value > 0.05). Based on Bonferroni's post hoc test, it was found that the lower social class had a higher level of consumer innovativeness, perceived risk, and innovation adoption than the middle class, but the difference with the upper class was not significant. Consumers with primary education level have a higher level of perceived risk and innovation adoption than secondary and senior high education levels. Consumers with a bachelor's degree have a higher rate of consumer innovativeness than that of secondary education. However, it is lower than consumers with basic education in terms of perceived risk and innovation adoption. Based

on the Bonferroni's test, it is found that consumers who do not work, including housewives, have a lower consumer innovativeness value than employees and students. Consumers from the group of high-ranking officials, technicians, and unemployed consumers have a higher level of perceived risk and innovation adoption than the types of work of middle managers, teachers, freelancers, office workers, and students. Income distinguishes consumer innovativeness and perceived risk, but not innovation adoption. Consumers from the high-income group (income > IDR 31,200,001 - 38,400,000), have a higher level of consumer innovativeness and perceived risk compared to others.

### 3.1.2 The result of Discriminant analysis test for hypothesis 2

The first discriminant analysis was carried out for the effect of consumer innovativeness on perceived risk. The dependent variable Y is divided into 2 groups. Group 1 is a group that does not dare to take risks and group 2 is a group that is brave enough to take risks on credit purchases. The second discriminant analysis was carried out on the effect of consumer innovativeness with the adoption of innovation. In the adoption of innovation variable, respondents are grouped into 2 groups which are group 1, which has less preference for the adoption of innovation, and group 2, which has a preference for the adoption of innovation.

The results of the descriptive analysis show that Group 2, who are brave enough to take risks (risk seekers) and dare to adopt innovations (adopter), has a higher average value of consumer innovativeness than group 1, who are less courageous in taking credit risk (risk averse) and less courageous in innovation adoption (late adopter). In Wilk's Lambda results, it is known that the statistical significance value of Chi-square = 0.000 (<0.05), which means that there is a significant difference between the two groups of respondents based on the consumer innovativeness variable.

**Table 3.** Wilk's Lambda, F and Chi-square Test

Step	Dependent Variable	Number of Variables	Lambda	df1	df2	df3	F Stat	Sig.	Chi-square
1	Risk perceived	1	.904	1	1	937	100.059	.000	95.018
	Adoption of Innovation	1	.963	1	1	944	36.036	.000	35.347

**Table 4.** Eigenvalues

Function	Dependent Variable	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	Risk perceived	.107 <sup>a</sup>	100.0	100.0	.311
1	Adoption of Innovation	.038 <sup>a</sup>	100.0	100.0	.192

From the canonical correlation results in equation 1, with the dependent variable perceived risk, the relationship between the perceived risk variable and consumer innovativeness is shown as (CI) = 0.311 and R<sup>2</sup> = 0.097. The value of the closeness of the relationship is very small because it is less than 0.4. The value of F = 100.059 (Sig = 0.000) which means that the effect of consumer innovativeness on perceived risk is significant. From the results of the canonical correlation equation 2, with the dependent variable adoption of innovation, the relationship between the innovation adoption variable and CI results is 0.192. The value of the closeness of the relationship is very small. The value of F is 36.036 (Sig = 0.000), which means that the influence of CI on innovation adoption is significant.

In the equation, the effect of consumer innovativeness on perceived risk shows that there is a significant difference between the risk taker and risk averse (Chi-Square = 95.018, Sig = 0.000). The results on the equation of the effect of consumer innovativeness on innovation adoption show that there is a significant difference between the adopter and late adopter groups (Chi-Square = 35,347, Sig = 0.000).

**Table 5.** Function

Independent Variable	Risk perceived	Adoption of Innovation
Consumer Innovativeness	.180	.175
(Constant)	-9.815	-9.508

According to Table 5 above, the following equation was acquired:

$$Z1 = 0.180 - 9.815 CI \quad (1)$$

$$Z2 = 0.175 - 9.508 CI \quad (2)$$

**Table 6.** Classification Function Coefficients

Independent Variable	Risk perceived		Adoption of Innovation	
	1	2	1	2
Consumer Innovativeness	1.711	1.829	1.626	1.694
(Constant)	-45.675	-52.081	-44.049	-47.760

Fisher's linear discriminant functions

Based on Fisher's linear discrimination, the results obtained in equation 1 show that CI is more influential in group 2 (the risk seeker group on purchases on credit). From the predicted group membership of Indonesian consumers, 65.5% of original grouped cases correctly classified and the remaining 34.5% are probably not correctly classified.

In equation 2, the results show that CI is more influential in group 2 (adopter group) based on Fisher's linear discrimination. From the results of predicted group membership for Indonesian consumers, 57.6% of original grouped cases are correctly classified and the remaining 42.4% are probably not correctly classified.

**Table 7.** Correlations

Variable		Consumer Innovativeness	Risk Perceived	Adoption of Innovation
Consumer Innovativeness	Pearson Correlation	1	.652**	.290**
	Sig. (2-tailed)		.000	.000
	N	948	934	935
Risk perceived	Pearson Correlation	.652**	1	.373**
	Sig. (2-tailed)	.000		.000
	N	934	977	959
Adoption of Innovation	Pearson Correlation	.290**	.373**	1
	Sig. (2-tailed)	.000	.000	
	N	935	959	972

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

Judging from the Pearson correlation between the three variables, the biggest correlation is between consumer innovativeness and perceived risk ( $r = 0.652$ ) compared to innovation adoption ( $r = 0.290$ ). Additionally, the correlation between the variable adoption of innovation and perceived risk is 0.373. Based on the equation coefficient 1 and 2 as well as from Fisher's linear discrimination, it can be seen that the equation coefficient 1 is greater than the equation coefficient 2. Thus, the results show that Consumer Innovativeness in Indonesian consumers is more related to the courage to take risks, especially in credit compared to Innovation adoption.



## 3.2 Discussion

### 3.2.1 The difference between consumer innovativeness, perceived risk, and adoption of innovation is based on demographic factors

The results of this study indicate several demographic factors which distinguish consumer innovativeness, perceived risk, and Indonesian consumer adoption of innovation. Demographic factors are very important and related to willingness to adopt new technology [95]. Demographics influence individual adoption habits [96]

Based on the MANOVA and ANOVA tests, the results show that consumer innovativeness was differentiated by age, marital status, family status/ole, income, occupation, education level, social class, and tribe, but was not significantly differentiated by sex/gender and tribe grouping, which are Javanese and non-Javanese. From these results, it is interesting to note that social class and all of its factors, namely income, occupation, and education, are factors that differentiate innovativeness.

Perceived risk is differentiated based on gender, age, marital status, status in family, income, education, occupation, social class, and tribe. The study on consumers who are older, single, divorced, full nest family, well educated, self-employed, unemployed, retired, and lower income, and study shows a negative correlation with perceived financial risk [97].

The results of this study indicate that there is no relationship between gender differences with consumer innovativeness and innovation adoption. These results are in line with the results of study [98] but not in line with other study [99] [100][101]. The results also show that there is a difference in perceived risk between men and women. The results showed that male consumers were more willing to take financial risks than credit purchases. This result is probably due to the reasons given by Goyal [102] who stated that women are more related to the functional value of supplementary services of credit cards and who stated that women prefer the adoption of new product innovations [113].

Age significantly differentiates consumer innovativeness and perceived risk, but it is not significant for new product adoption. This result is different from this research [104] [105] whose studies stated that there is no difference in consumer innovativeness based on age aspects. This result is different than studies [106] [107] where age did affect new product adoption. From the post hoc Bonferroni test, it is known that the 26-55 year age group has a higher level of consumer innovativeness and a higher perceived risk compared to the age group of adolescents-early adults (17-25 years). The results of this study also indicate that there is no difference in the level of innovation adoption between age groups. Young consumer groups are significantly more socially motivated to buy innovations than older respondents [108].

In general, marital status and role in family has a higher mean in terms of consumer innovativeness and perceived risk. However, there wasn't any difference towards new product adoption. This result is different from study which stated that there is no difference on innovativeness caused by marital status [109]. This went accordingly to the research which stated that benefitting of credit increases along the family life cycle, especially those with children [110].

In the category of ethnic groups, there is no influence/relationship between Javanese and non-Javanese ethnicity differences with consumer innovativeness and perceived risk but ethnicity is significant in new product adoption. The differences in nationality and cultural differences will lead to varying levels of consumer innovativeness [111] [112].

There is an influence/relationship between social class and consumer innovativeness, perceived risk and innovation adoption. Based on Bonferroni's post hoc test, the results show that the lower social class has a higher level of consumer innovativeness, perceived risk, and innovation adoption than the middle class. These results support the study which states that consumer innovativeness is intrinsic personality traits that are created based on many factors such as income and social factors [113].

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The results of this study indicate a correlation between the education level with consumer innovativeness and innovation adoption. Low level of education correlates with higher rates of innovation adoption. Less educated people prefer the adoption of new product innovations because it's a form of interpersonal way of communication [114]. The level of education affects the adoption of new product innovations [115]. However, in terms of consumer innovativeness level, this result is different from another research [116].

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This study also shows that income distinguishes between consumer innovativeness and perceived risk, but not innovation adoption. Purchasing by credit forces consumers to specifically budget their money and is a symptom of today's consumers to buy on credit rather than saving and using the money later [117]. Income has an effect on the adoption of new product innovations [118]. In contrast, other research show that income is not related to consumer innovativeness [119] [120].

This research shows that consumer innovators tend to be men who are brave enough to take the risk of purchasing by credit, young consumers, high-income consumers, and are married. These results partially confirm the research which state that there is a possible tendency that demographically, innovators are young consumers, male, mobile, and have higher income and education [121] [122]; but slightly different from other the research which states that consumer innovators have higher income, higher education, are female, and single [123].

An interesting result for Indonesian consumers is that the lower social class has a higher level of consumer innovativeness, perceived risk, and innovation adoption than the middle class. This finding is contrary to the study which states that the higher the income and education, married, the larger the family size, and the younger the age tend to have higher level of innovativeness [124].

From this study, it is known that the mean value for the adoption of innovation for non-Javanese tribes is higher than for Javanese. The difference between consumer innovativeness, perceived risk, and innovation adoption based on ethnic differences is interesting for further research. Indonesia, with various ethnic groups, will allow a lot of consumer innovativeness research based on ethnicity. Future research may explore the characteristics of Javanese and non-Javanese personality traits.

### 3.2.2 Consumer innovativeness traits: Are Indonesian consumers risk seekers or first adopters?

The results show that consumer innovativeness in Indonesian consumers is more related to the courage to take risks, especially in credit purchases, compared to the adoption of innovation. This result is in line with many researches [125] [126], also contrasts which argue that innovativeness is more inclined towards individuals who adopt new products earlier [127] [128] [129]. The innovative consumers are also consumers who have a positive attitude to new things [130] [131]. Some practitioners see that launching new products in the long run will be beneficial when targeting innovative consumers who are willing to deal with the risks and uncertainties associated with new products [132].

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In general, the results of this study indicate that the demographic factors of Indonesian consumers are related to consumer innovativeness and perceived risk because more than 8 out of 10 demographic aspects distinguish the two variables compared to innovation adoption. This result is different from the research which stated that there were no significant differences were found among any of the demographic factors and these variables [133].

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## 4 Conclusion

Based on the results of the study, it was concluded that consumer innovativeness was differentiated according to age, married status, family status/role, income, education level, social class and tribe, but did not differ significantly on sex/gender and Javanese/non-Javanese ethnic division. Perceived purchasing credit is differentiated according to sex/gender, age, married status, family status/role, income, education level, occupation, social class, and tribe, but it is not differentiated according to the division of Javanese and non-Javanese tribes. Adoption of innovation is not differentiated according to sex/gender, age, married status, family status/role, level of income but differentiated according to education, occupation, social class, tribe and Javanese/ non-Javanese categorization.

33 Partially, it was found that there is no gender relationship with consumer innovativeness and innovation adoption, but there are differences in perceived risk. There is an influence between age, marital status, role in family, and income with consumer innovativeness and perceived risk, but it is not significant for innovation adoption. There is an influence on the level of education, type of work, income, and social class with consumer innovativeness, perceived risk and innovation adoption. There is an influence/relationship between ethnicity and consumer innovativeness, perceived risk, and innovation adoption. However, in the category of Java vs Non Java tribes, there is no effect on consumer innovativeness and perceived risk, but the adoption of innovation is significantly different.

The biggest correlation between consumer innovativeness is the variable perceived risk compared to innovation adoption. Consumer Innovativeness Indonesian consumers have more to do with the courage to take risks, especially in credit, than with the adoption of innovation.

42 Academics and practitioners pay a lot of attention to consumers' adoption of new products [134] because the success of the diffusion of innovation depends on how big the company's innovation is and consumer innovativeness. The practical implication of this research is aimed at marketers regarding targeting. Identifying innovators in any market is essential for proper segmentation and market analysis to make it more competitive in the market [135]. In this regard, marketers need to make strategies that are appropriate for the risk averse consumer group, for example the right product features, ease of payment, and post purchase service guarantees. Investment advisors will also gain benefit as they will know how to advise the individual investors based on their demographics. Perceived risk also negatively affects happiness and impulsive purchasing behavior [136], especially on service based purchase [137]. The other research shows that young and well-educated consumers with high income are a group of early adopter consumers [138]. These results have an impact on marketers to focus on marketing at the level of education, type of work, social class and ethnic origin.

However, there is an interesting finding that the variables of social class and its derivatives (occupation, education, and income) and tribe in Indonesia affect the differentiation of the three variables. Future research can further explore the variables of social class and ethnicity, especially among consumers of a heterogeneous country. Likewise, more research is needed to determine which additional factors, such as expectations, attitudes, preferences, previous experiences, family background and culture, or financial stability factors [139]. Future research also needs to look at differences between individuals and categorization of people's responses to new things [140] and psychographic [141]. Consumer innovativeness also needs to be linked to differences in culture and nationality, for example with Hofstede's nationality [142].

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