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Abstract: Despite efforts made by organisations for the provision of high-quality services, service failure (SF) is still considered a serious challenge in most organisations. In previous studies, there has been less interest in factors affecting the behaviour and satisfaction of customers with e-service recovery. To fill the existing research gap, this study investigates the effect of e-service recovery strategies on customer satisfaction with service recovery. It also aims to show how value co-creation adjusts customer perceptions of justice towards online service recovery and restores customer satisfaction. The hypotheses were tested using structural equation modelling with the help of SMART PLS. To this end, a questionnaire including 25 items was distributed among Alpha Bank customers selected by stratified random sampling (560 questionnaires were finally analysed). According to the results, ESR strategies improved customer-perceived justice and eventually customer satisfaction with service recovery (SR). The moderating role of value co-creation was rejected in Alpha Bank.

Keywords: electronic service recovery strategies; customer satisfaction with ESR; perceived justice; value co-creation.

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1 Introduction

Given the intense competition in the service industry, organisations spend a fortune on providing high-quality services to improve customer satisfaction and loyalty. Banking is a service industry that has experienced extensive development under the influence of information and communication technology (ICT). E-banking, mobile bank, ATMs, and kiosks are among the channels through which customers could receive banking services. E-banking provides customers with more diverse and extensive services. Despite a significant reduction in human errors by using intelligent equipment, systemic errors, disconnection, and disruption in the e-banking network seem inevitable and may lead to customer dissatisfaction with banking services (Chen et al., 2018).

Despite a general agreement on the significance of high-quality services, SF is considered a common problem in most businesses including banking. SF is among the most common causes of customer dissatisfaction.

This necessitates the prevention of SF and paying special attention to SR in organisations (Chaparro-Peláez et al., 2015). SR is a process through which SFs are corrected to reach a desirable situation by taking proper measures. This process is dependent on the measures taken by the service provider who is responsible for SFs (Grönroos, 1988).

Justice is a suitable index for implementing ESR where customer involvement in the design of SR strategies greatly helps this process and eventually leads to customer satisfaction (Holloway et al., 2005). The efficiency of ESR alternatives proposed systematically to customers by an organisation in the event of SF is dependent on the justice customers perceive from SR. Customers may explain what they expect from ESR through co-creation and measures that should be exactly taken by banks to maintain customer loyalty. Value co-creation is the central principle of service-dominant logic (SDL) and customer involvement as active members in this process. Co-creation results in more respect for customers and their improved satisfaction (Jung and Seock, 2017).

Previous studies have emphasised that the service recovery process is more effective in the presence of value co-creation. More precisely, customer participation in the recovery process increases customer satisfaction (Dong et al., 2008). Co-creation in service recovery (CCSR) refers to the collaboration between a customer and a service provider to develop service recovery content (Roggeveen et al., 2012). In co-created service recovery (CCS-R), customers actively engage in developing service recovery content (Roggeveen et al., 2012) and finding the right solutions. By contrast, non-co-created service recovery (NCCS-R) is started and run only by a company. It seems that the positive effect of customer participation in service recovery on post-recovery evaluation may vary depending on the nature of service failure (SF) (e.g., delay in service delivery) (Roggeveen et al., 2012). Therefore, the optimal level of customer CCSR depends on the level of customer co-creation in service delivery. CCSR is usually preferred by customers who experience the failure of highly co-created

services. By contrast, customers do not take responsibility for failed services low on co-creation because they are less engaged in the service recovery process. If customers blame a company for a SF, they feel less guilty and expect the service provider to resolve the issue on their own by providing recovery services on behalf of the company (Grégoire et al. 2009). As a result, in terms of failed services low on co-creation, customer participation in service recovery is considered unfair and can damage post-recovery evaluations (Mills et al., 1983; Roggeveen et al., 2012). Vázquez-Casielles et al. (2017) state two points about the positive effect of service recovery process on customer attitude and behaviour; first, the service recovery process requires an operational vision as a transactional activity of the firm and, second, the service recovery process requires a strategic vision that focuses on identifying and fixing the problem or preventing any possible failure in future. To this end, firms should interact with their customers through value co-creation activities. CCSR can increase efficiency by integrating customer and company resources (such as tools, skills, and knowledge) (Vargo and Lusch, 2004). A co-created service recovery increases a customer's perceived control over both the process and the recovery solution (Guo et al., 2016). Park and Ha (2016) also showed that CCSR makes customers realise that service providers are doing their best to achieve the desired result and, ultimately, influences customers' post-recovery evaluations. On the other hand, allowing customers the opportunity to express their views before making the final decision demonstrates an organisation's flexibility (Karande et al., 2007), which can increase customer satisfaction. Therefore, the customers who participate in CCSR are more likely to achieve the desired results tailored to their needs and have more positive post-recovery evaluations.

Numerous studies are carried out on SR due to the development of service economics, customer-oriented strategies, and the recent intense competition. According to the literature, few studies have been conducted on ESR, and most studies have focused on the results of ESR and its effect on customer satisfaction, loyalty, and word-of-mouth (WOM) promotion (Maxham and Netemeyer, 2002; Chang and Hsiao, 2008). However, there has been less interest in customer involvement in the SR process to achieve strategies improving customer-perceive justice and ultimately customer satisfaction. This study aims to fill the existing research gap. In other words, it hence aims to show how customer participation in the selection of electronic service recovery (ESR) strategies can affect customer's understanding of service recovery justice and help restore customer satisfaction. The findings of this study not only serve as a basis for future studies in this field, but also help managers of service organisations and firms and IT experts to correctly decide about customer participation in designing ESR strategies. After reviewing the literature, the methodology is explained and findings are discussed. Finally, concluding remarks and recommendations are presented.

2 Literature review

2.1 Customer-technology relations

Many studies have been conducted on how ICT can affect customer and organisational behaviour (Roberts, 2000; Eggleston et al., 2002; Cordelia, 2006; Carayannis et al., 2017), the effects of technology in identifying customer needs and expectations (Wilson, 1995; Wilson and Vlosky, 1998), and the contribution of technology in defining more

efficient and effective sales strategies. It is necessary to emphasise the technological readiness of customers to use ICT in order to further investigate the effect of ICT on organisational performance and, thereby, define the cognitive domain of the relational and shopping area in which firms and their customers are involved. Additionally, it is essential to consider cognitive and behavioural domains to provide a comprehensive picture of the customer-firm relationships in the service industry and the role of technology in this regard (Castaldo and Cillo, 2001). The cognitive domain is restricted to ICT in the technology readiness structure, whereas the behavioural domain requires attention to the ICT-related actions of customers. Acceptance of new technologies is considered a challenge when we focus on customer approaches to ICT (Chesbrough, 2010). In other words, technology is considered a merely potential value that can be actualised when all involved actors have the knowledge, skills, abilities, and willingness to work in the new directions defined by technology-based tools (Amendola et al., 2018). Since the effect of technology on customer satisfaction is strongly influenced by customer's mental attitude and approach to technology, firms need to engage customers in their technology planning and allow them to gain useful knowledge, competencies, and capabilities to make better use of ICT tools (Tynan et al., 2010). The imbalance between customer readiness and the technology used in a firm's services can increase the risk of SF (Zhu et al., 2013).

2.2 *ESR strategies*

SR is a thoughtful and planned process to restore harmed customers to be re-satisfied with the organisation. The response of any organisation to SFs should be the result of coordinated awareness occurring through organisational efforts to predict SFs and develop its resources and capabilities to deal with such failures (Zemke and Bell, 1990). A good SR system should identify and solve problems, prevent customer dissatisfaction, have incentives for complaints, and learn from these complaints (Armistead et al., 1995). ESR refers to organisational efforts made to eliminate electronic problems with services. This study considers SF and SR for the three most commonly used e-banking services including internet bank, mobile bank, and telephone bank. Moreover, responsiveness, compensation, and relationship adopted from Zehir and Narcıkara (2016) were considered as ESR strategies and discussed below:

- 1 Responsiveness means effective and enthusiastic response to customer needs, demands, and problems to increase customer value. responsiveness measures the ability of a service provider in providing proper information to customers in the event of a problem. For instance, when a problem occurs in an e-banking transaction, a follow-up email explaining the transaction error is sent to the customer (Zeithaml et al., 1990).
- 2 Compensation means to expiate the loss suffered by customers after dissatisfaction with services, for example, through fee exemptions, more points in the customer club, and apology.
- 3 Relationship means online responding to customers via telephone or website, call centres, free numbers, and online chat. For instance, when a problem occurs, a personalised notification is sent via a text message, or the customer is contacted via the call centre to solve that problem (Parasuraman et al., 2005).

2.3 Customer-perceived justice

The SR literature has mainly focused on justice, and the theory of justice primarily investigates SR as a theoretical framework from a social evaluation angle. Customers evaluate SR efforts through the lens of justice. If customers feel being overcharged for what they achieved out of a product or service, they will perceive this transaction/treatment to be unfair – i.e., SF. Justice thus serves as a critical concept for defining SF and SR (Kuo and Wu, 2012). Customers usually evaluate SR from the three dimensions of distributive, procedural, and interactional justice, all based on customer-perceived SR and how it is served (Gabbott et al., 2011). These three dimensions for perceived justice are used in this study. Distributive justice means an allocation of resources to reach an equal situation in transactions (Karatepe, 2006). Distributive justice refers to the recovery of services received by the customers of an organisation. Customers should perceive a fairly and respectful organisational behaviour in the SR process (Maxham and Netemeyer, 2001). This type of justice is related to compensation for customer losses caused by SFs (Lovelock et al., 2009). Procedural justice is a perception of policies and strategies used by decision-makers to achieve the desirable result (Lind and Tyler, 1988). It deals with strategies and principles that every customer needs to implement. Procedural justice deals with customer-perceived SR. Through components of procedural justice, customers become interested in evaluating the flexibility, efficiency, and transparency of the SR process (Kuo and Wu, 2012). Interactional justice refers to interactions with other customers and is related to customer-perceived organisational behaviour during the SR process. Some studies refer to the empathy, politeness, and efforts made by organisational staff as the main components of interactional justice (Homburg and Fürst, 2005).

2.4 Value co-creation

Value creation means that organisational activities, processes, and decisions create positive achievements for all stakeholders including customers. An organisation is considered valuable, respected, and influential when customers receive value from the measures taken by that organisation (Ernest & Young, 2013). Value co-creation was first introduced in the management literature in early 2004 (Prahalad and Ramaswamy, 2004). Value co-creation is achieved by combining efforts made by the organisation, customers, stockholders, and all stakeholders involved in the service provision process. The value co-creation process is a set of activities and measures taken by customers to achieve individual and organisational goals (Heinola, 2012). Value co-creation occurs when customers play an active role in service provision, and firms use their resources for value creation. In this study, value co-creation means the process for satisfying organisational and individual needs through mutual cooperation. In the value co-creation process, customers explain what they expect from the organisation (expected SR) and help organisational staff in creating a strong relationship by providing proper information and responding to questions and suggestions. This term has its roots in the SDL which primarily suggests that customers need to integrate their resources (tools, skills, knowledge, etc.) with organisational resources to achieve the maximum value (Vargo and Lusch, 2004).

In general, customer participation in service delivery brings benefits for both service providers and customers. Value co-creation not only enables firms to constantly adapt to

the changing needs of customers (Etgar, 2008), but also increases customer satisfaction and a sense of success (Meuter et al., 2000). Dong et al. (2008) classify customer participation into three categories: low (firm recovery), moderate (joint recovery), and high (customer recovery).

- 1 Firm recovery: The firm offers its staff to run the entire service recovery process (Dong et al., 2008). Accordingly, the staff takes recovery actions and provides customers with the ultimate solution to a problem. Customer satisfaction will increase if an effective solution is provided by the firm (Harris et al., 2006). In addition, customer satisfaction will further increase if the firm's recovery solution includes partial compensation for the damage to the customer (Wirtz and Mattila, 2004).
- 2 Joint recovery: The firm and its customers collaborate in the service recovery process to find a solution (Dong et al., 2008). The firm may ask customers about their preferences to find the best option, and customers actively participate in this process to maximise the recovery profit.
- 3 Customer recovery: Customer recovery occurs when the firm is not involved in SF and the recovery process is done entirely by customers as the sole actor (Zhu et al., 2013).

Firms should determine the level of customer participation in service retrieval according to the extent of their participation in service delivery.

2.5 *Satisfaction with ESR*

Satisfaction is a positive feeling eventually created in customers when their expectations are met and they are satisfied with the performance of service providers. A sense of pleasure, satisfaction, or dissatisfaction is created in customers when customer expectations are respectively at the same level, higher or lower than received services. According to Grönroos (2000), SR aims at satisfying and maintaining customers and achieving long-term profitability. Satisfaction occurs when feelings caused by satisfied expectations are associated with feelings arising from previous experiences. Satisfaction is a key factor in the use of services in the electronic context (Liao, 2007). In the SR process, electronic satisfaction is achieved when customers are satisfied with efforts made for the improvement of services referring to service provider responsiveness and a convenient way for addressing complaints (Smith et al., 1999). According to the literature, when an SF occurs, previous experiences of delivered services affect customer dissatisfaction with that service.

3 **Relationship of variables and conceptual model**

3.1 *Relationship of ESR strategies and customer-perceived justice*

According to the theory of justice, individuals involved in the value exchange (e.g., a transaction) estimate the fairness of that exchange. Any unfair behaviour may violate the implicit contract between the parties. If customers feel being overcharged for what they achieved out of a product or service, they will perceive this transaction/treatment to be

unfair – i.e., SF. Justice thus serves as a critical concept for defining SF and recovery (Kuo and Wu, 2012). Customers usually evaluate SR from the three dimensions of distributive, procedural, and interactional justice, all based on customer-perceived SR and how it is served (Gabbott et al., 2011).

According to the social exchange theory, distributive justice focuses on the role of fairness. Individuals perceive the fairness of an exchange by comparing their inputs with obtained results to determine the fairness score of the exchange party. An exchange is perceived as fair when this score is proportional to the scores given by other customers (Maxham and Netemeyer, 2002). Jung and Seock (2017) studied the effect of SR on customer-perceived distributive justice. Apology and compensation for resolving customer problems were determinants of distributive justice so that good SR occurs when an organisation apologises and creates a positive outcome for the customer by sending a text message or via a telephone call (Tax and Brown, 1998). Complainer-perceived distributive justice involves compensation provided by an organisation in response to inequality caused by an SF. In SR, identical outputs are necessary to preserve the relationship between the customers and an organisation (Bitner et al., 1990).

The solution to unsuccessful transactions is also related to justice arising from organisational policies and rules. Flexibility in the face of SFs achieved by procedural justice leads to a good SR process (Lovelock et al., 2009). Responsiveness, flexibility in responding to customer needs, and a transparent SR process influence customer-perceived procedural justice (Tax and Brown, 1998). The same result was reported by McCollough et al. (2000). The results of studies by Smith et al. (1999) also indicate the positive effects of ESR on customer-perceived procedural justice.

In interactional justice, employees work hard to address problems and expend a lot of energy for this purpose. When customers see the organisational follow-up and responsiveness for compensating SFs, they generally perceive the fairness of that organisation as a result of interaction among organisational staff and customers (Homburg and Fürst, 2010). According to Jung and Seock (2017), customer-perceived interactional justice varies with different kinds of SR, and there is a relationship between these two factors. Moreover, Maxham and Netemeyer (2002) confirmed the effect of customer perception of addressing complaints and SR efforts on interactional justice and willingness to reuse banking services. The research hypotheses are formulated as follows:

- H1 ESR strategies has a significant positive effect on customer-perceived distributive justice.
- H2 ESR strategies has a significant positive effect on customer-perceived procedural justice.
- H3 ESR strategies has a significant positive effect on customer-perceived interactional justice.

3.2 Perceived justice and customer satisfaction with ESR

According to Maxham and Netemeyer (2002), customer willingness for service reuse is improved when customers perceive a fair SR process. In general, customers feel good when receiving what they expect from addressing problems and SR. This type of justice mainly focuses on the feelings of customers with respect and equality as a result of a comparison between the costs of inputs and received outputs. Distributive justice is the

best predictor of customer satisfaction (Smith et al., 1999). When customers receive an acceptable expected response to their problem, they can conclude that the organisation is eager to compensate for its mistakes. Kim et al. (2009) also confirmed the relationship between customer-perceived distributive justice and satisfaction with SR.

According to the literature, procedures and policies adopted by organisations for ESR significantly affect customer satisfaction with SR through waiting time, response speed, and flexibility (Bitner et al., 1990). Marketing literature emphasises procedural justice as a key factor in resolving organisational problems and complaints (Seiders and Berry, 1998). In a good ESR process, customers perceive those procedures fairly, satisfactorily, and consistently, that is they are consistent for different individuals over time. Moreover, they should comply with ethical standards and the spiritual values of customers (Coyle et al., 2008).

Interactional justice is of great importance in the sense that its observation for customers is amongst the cheapest ways for influencing customer satisfaction with SR. Unlike distributive justice whose execution is usually associated with costs such as fee exemption and compensation, interactional justice does not impose any cost but requires the training of employees. Schoefer (2008) confirmed the relationship between customer-perceived interactional justice and satisfaction with ESR. Furthermore, the results of Chang and Chang (2012) confirmed the significant positive relationship between these two variables. The fourth to sixth hypotheses are formulated according to the above discussion:

- H4 Customer-perceived distributive justice has a significant positive effect on customer satisfaction with ESR.
- H5 Customer-perceived procedural justice has a significant positive effect on customer satisfaction with ESR.
- H6 Customer-perceived interactional justice has a significant positive effect on customer satisfaction with ESR.

3.3 Moderating role of co-creation in perceived justice and customer satisfaction

In distributive justice, customers perceive that they are treated fairly and respectfully until reaching the final output of the SR process. Therefore, when customers are involved in the SR process, they will likely evaluate the obtained results more positively. When customers could affect justice arising from the real SR output, value co-creation causes a higher level of customer satisfaction and loyalty to the organisation. When organisational customers judge the SR consequences, they actually judge the observation of distributive justice in that organisation. Customer satisfaction increases when SR methods are consistent with the ethical values. Co-creation improves organisational awareness of customer needs to meet their expectations in the best way possible. Customer involvement will bring organisations with more positive results regarding efforts made by organisational staff to find a satisfactory solution to a problem (Folger and Cropanzano, 1998).

Customers are more effectively involved in exact and sustainable processes and procedures in which views of all stakeholders are considered without any partiality. Organisations with a flexible structure for simplifying the procedures of addressing

complaints and provide customers with opportunities for changing unfair decisions will offer customers a more favourable experience. As an internal stimulus, value co-creation is of great importance in customer-perceived fairness of procedures and processes. It is, therefore, necessary to use value co-creation for a good feeling and a pleasant experience, which can lead to customer satisfaction. Consequently, if one asks such customers about an organisation, they will recommend that organisation to others. An important procedure in the SR process, called voice recovery, provides customers with this opportunity to select their favourable SR methods leading to customer satisfaction. Fair ESR procedures allow customers to comment even if such comments may not affect consequences. A procedure allowing customers to express their suggestions is fairer than that preventing comments by customers. Fair procedures bring a sense of satisfaction when customers face undesirable consequences (Dowall and Fletcher, 2004).

According to Vargo and Lusch (2004), value co-creation is a key factor for evaluating customer-perceived justice from SR processes leading to increased customer satisfaction. When customers help the organisational staff who seem hesitant during the SR process, problems are considered from the customer perspective and consequently, organisational staff receives positive energy in solving problems. According to the SDL, customers play a key role in value creation which eventually creates organisational values (Navarro et al., 2014). When customers are involved in the SR process and their views on the appropriateness of interactions among employees and their efforts for solving problems are taken into account, interactional justice creates a more positive understanding of customers, and they benefit from a more favourable SR experience. This provides customers with a sense of importance and centrality and raises their self-confidence. In general, co-creation increases customer commitment to an organisation as a prerequisite for satisfying customers. Accordingly, the seventh to ninth hypotheses are formulated as follows:

- H7 Co-creation moderates the relationship of customer-perceived distributive justice and satisfaction with ESR.
- H8 Co-creation moderates the relationship of customer-perceived procedural justice and satisfaction with ESR.
- H9 Co-creation moderates the relationship of customer-perceived interactional justice and satisfaction with ESR.

3.4 Mediating role of perceived justice with ESR strategies and customer satisfaction

The empathy of the service provider demonstrating the level of perceived interactional justice is a key factor in evaluating ESR and customer satisfaction. It is assumed that customer perceptions are affected by the way they are treated. The results of multiple studies show that in the event of inappropriate service provision, customer satisfaction is improved if the service provider openly shows his/her concern and interest in the SR process (Cheung and To, 2016). Tax and Brown (1998) found that following an SF, customer satisfaction will increase when service personnel behaves more empathetically and responsively.

Perceiving the unfairness of SR methods rather than unfair SR results may result in customer anger and resentment (Lambert, 2003). A customer's reaction to SR methods is

dependent on customer-perceived procedures, not their actual nature because humans do not psychologically behave based on realities but react based on perceived realities. According to Kim et al. (2009), procedural justice plays a key role in customer-perceived fairness of organisational behaviour in executing procedures and processes required for recovering SFs. Tax and Brown (1998) believe that if proper compensation is provided to customers through unfair methods, it will lose its effectiveness as also confirmed by Homburg and Fürst (2005) and Maxham and Netemeyer (2002).

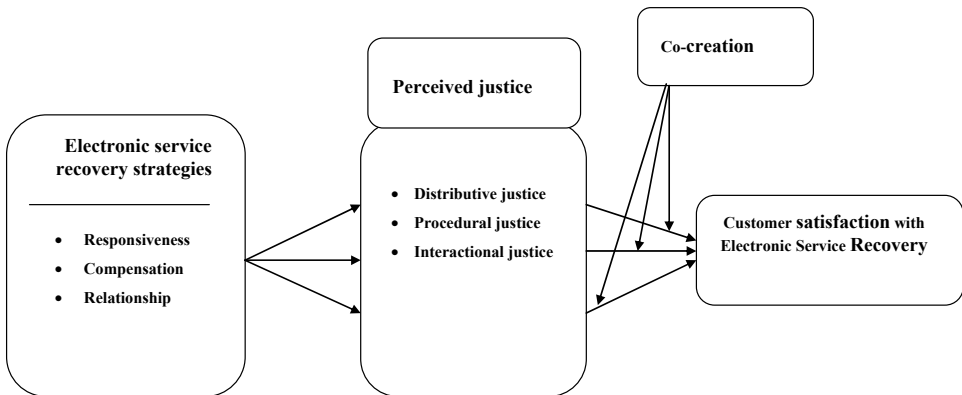
The review of the justice literature on addressing customer complaints shows that in 61% of studies, distributive justice had the greatest effect on customer satisfaction with ESR (Orsingher et al., 2010). Compensations such as free flights, residence in hotels, or even a free meal are used in the airline industry. Fee reduction in banking services is also used in Internet banking. According to British Airways reports, the airline gained 2 pounds per every pound invested in SR. The results also showed that distributive justice is the best predictor of customer satisfaction with ESR (Smith et al., 1999). According to the above discussions, the tenth to twelfth hypotheses are formulated as follows:

The tenth hypothesis is formulated as follows:

- H10 ESR strategies has a significant positive effect on customer satisfaction with ESR with the mediating role of customer-perceived interactional justice.
- H11 ESR strategies has a significant positive effect on customer satisfaction with ESR with the mediating role of customer-perceived procedural justice.
- H12 ESR strategies has a significant positive effect on customer satisfaction with ESR with the mediating role of customer-perceived distributive justice.

Taking into account the relationship of variables, the conceptual model is displayed in Figure 1.

Figure 1 Conceptual model



4 Methodology

This is an applied study in terms of objective and a descriptive-survey study in terms of methodology. The study population consisted of customers of the northeast branches of Alpha Bank¹ who at least experienced baking SFs once. A total of 620 participants were

selected as the statistical sample by stratified random sampling (customers were classified into the premium branch, first-, second-, and third-class groups). Finally, 560 questionnaires were analysed. In the statistical sample, 68% were 30- to 55-year-old males with an average age of 41.5 years (standard deviation=7.19), 58.6% had a bachelor's degree or higher, and 48.3% had an experience of over 12 years of using banking services. A standard questionnaire containing 35 questions was used to collect the required data. To evaluate the ESR strategies methods including responsiveness (5 items), compensation (3 items), and relationship (3 items), the study by Zehir and Narcikara (2016) was used. The study by Jung and Seock (2017) was used for assessing distributive justice (4 items), procedural justice (4 items), and interactional justice (5 items). The study by Cheung and To (2016) was used to assess value co-creation (4 items) and customer satisfaction (7 items).

The face and content validity of the final questionnaire were confirmed by ten banking affair experts. Cronbach's alpha was used to evaluate the reliability of the questionnaire. In this method, an initial sample containing 30 questionnaires was pretested. All values were above 0.7 (Table 1) indicating the acceptable reliability of the questionnaire. It noteworthy that all measures were assessed by a five-point Likert scale in the range of 1 (totally disagree) to 5 (completely agree). Various statistical methods were used to analyse the data. The Pearson product-moment correlation coefficient and structural equation modelling (SEM) were employed to calculate zero-order correlation coefficients and examine the hypotheses and the model's goodness of fit, respectively. Since AMOS cannot reveal the relationship between a moderator variable and other variables and it may cause a high probability of error, all statistical analyses in this study were performed in Smart-PLS and Statistical Package for the Social Sciences (SPSS-23). SEM is a powerful multivariate analysis technique of the multivariate regression family that allows testing a set of regression equations simultaneously. Moreover, the Sobel test was used to test the research hypothesis (mediated by perceived justice). Z-statistic in this test is calculated by the equation 1. If the Z-statistic is greater than 1.96, it can be concluded that the effect of the mediating variable is statically significant at the 0.05 level.

$$z = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_b^2 * s_a^2)}} \quad (1)$$

In this equation, a , b , S_a , and S_b denote path coefficient between the independent variable and the mediator variable, path coefficient between the mediator variable and the dependent variable, standard error of the path between the independent variable and the mediator variable, and standard error of the path between the mediator variable and the dependent variable, respectively.

5 Results

The existence of a correlation among the research variables is a prerequisite for applying latent variables in SEM. Accordingly, the Pearson correlation analysis was performed for this purpose. Table 1 shows the correlation of each variable with other variables, the Cronbach's alpha for each variable, and descriptive statistics including the mean, standard deviation, and the composite reliability coefficient.

Table 1 The mean, standard deviation, Cronbach's alpha and composite reliability coefficient of variables

Variables	Mean	Standard deviation	Cronbach's alpha	CR	1	2	3	4	5	6	7
1 Responsiveness	3.677	0.884	0.857	0.904							
2 Compensation	3.600	0.872	0.812	0.877	0.638**						
3 Relationship	3.755	0.949	0.821	0.893	0.605**	0.709**					
4 Distributive justice	3.585	0.852	0.735	0.835	0.587**	0.682**	0.578**				
5 Procedural justice	3.665	0.776	0.741	0.837	0.571**	0.711**	0.611**	0.693**			
6 Interactional justice	3.946	0.862	0.900	0.926	0.525**	0.627**	0.550**	0.624**	0.747**		
7 Co-creation	3.673	0.850	0.824	0.883	0.485**	0.568**	0.531**	0.585**	0.633**	0.540**	
8 Customer satisfaction	3.791	0.821	0.905	0.925	0.614**	0.687**	0.587**	0.669**	0.726**	0.702**	0.588**

Note: **Correlation at a significance level of $p < 0.01$.

Table 2 The results of the CFA

<i>Variables</i>	<i>Questions</i>	<i>Factor loading</i>	<i>T-value</i>	<i>Standardised error (SE)</i>	<i>AVE</i>
Responsiveness	q1	0/822	32/164	0/026	0/701
	q2	0/879	54/818	0/016	
	q3	0/873	63/924	0/014	
	q4	0/773	34/688	0/022	
Compensation	q5	0/779	31/369	0/025	0/641
	q6	0/811	30/888	0/026	
	q7	0/865	61/163	0/014	
Relationship	q8	0/743	27/197	0/027	0/736
	q9	0/834	39/666	0/021	
	q10	0/864	49/693	0/017	
	q11	0/875	71/399	0/012	
Distributive justice	q12	0/815	37/228	0/022	0/596
	q13	0/839	30/129	0/028	
	q14	0/854	53/391	0/016	
	q15	0/536	12/280	0/044	
Procedural justice	q16	0/854	49/329	0/017	0/599
	q17	0/866	60/371	0/014	
	q18	0/571	12/490	0/046	
	q19	0/769	25/743	0/030	
Interactional justice	q20	0/850	42/181	0/020	0/715
	q21	0/852	42/093	0/020	
	q22	0/882	58/657	0/015	
	q23	0/833	40/123	0/021	
	q24	0/808	38/205	0/021	
Co-creation	q25	0/802	36/283	0/022	0/655
	q26	0/826	44/676	0/018	
	q27	0/854	47/024	0/018	
	q28	0/752	23/522	0/032	
Customer satisfaction	q29	0/753	25/881	0/029	0/638
	q30	0/752	27/089	0/028	
	q31	0/815	36/572	0/022	
	q32	0/826	38/032	0/022	
	q33	0/837	46/219	0/018	
	q34	0/833	43/123	0/019	
	q35	0/768	28/531	0/027	

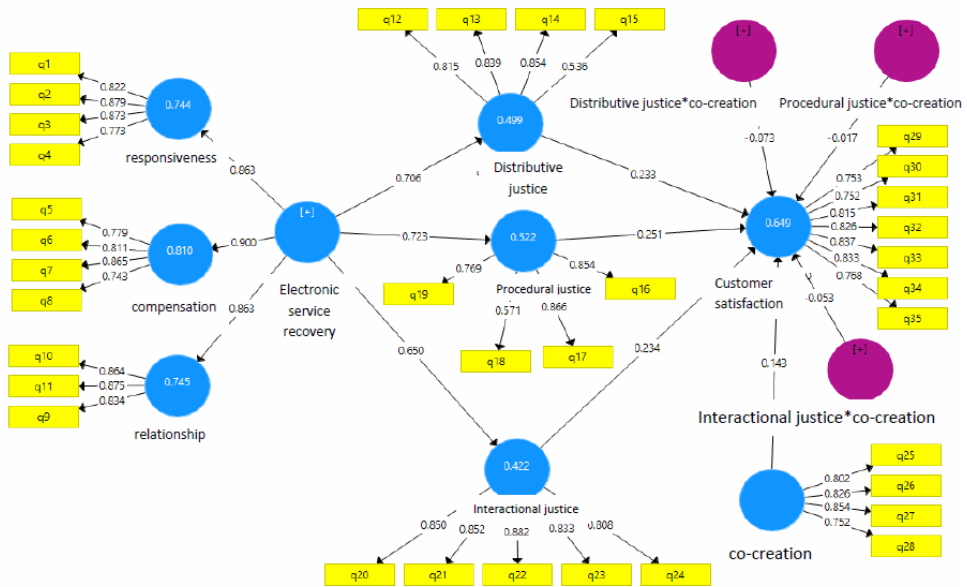
According to the results, responsiveness, e-service compensation, relationship, distributive justice, procedural justice, interactional justice, co-creation, and customer satisfaction are significantly correlated. Before evaluating the structural model, the

significance of the regression weight (factor load) of various constructs of the questionnaire in predicting the related items was examined by the confirmatory factor analysis (CFA) to ensure the fitness of the measurement models. Taking into account a significance level of 0.05, all items were confirmed. Moreover, the average variance extracted (AVE) test was used to determine the discriminant validity. The AVE varies from 0 to 1, and values larger than 0.5 are accepted as they guarantee that at least 50% of the variance of a construct is explained by its indicators. The results are shown in Table 2.

5.1 Hypothesis testing

Figure 2 displays the results of the SEM analysis and the fitted model.

Figure 2 Path coefficients for the conceptual model (see online version for colours)



Before testing the hypotheses, the predictive power of the model and model fitting should be first examined. To this end, the explained variation (R^2) was used for dependent variables and Q^2 for the predictive power of the model. The analysis of the coefficient of determination (R^2) helps to understand to what extent the variance of the dependent variable can be determined by a set of predictors. Three coefficients of determination of 0.19, 0.33, and 0.67 respectively indicate weak, moderate, and strong determination. The criterion Q^2 was used to examine the predictive power of the model. A Q^2 of 0.02, 0.15, and 0.35 for an endogenous construct (dependent variable) respectively show weak, moderate, and strong predictive power of an exogenous construct(s). Strong and moderate ranges indicate the appropriate predictive power for model variables. Table 3 presents R^2 and Q^2 .

Table 3 Coefficient of determination and the fit index for the research model

	<i>(R²) coefficient of determination</i>	<i>(Q²) coefficient</i>	<i>Coefficient power</i>
Responsiveness	0/744	0/489	Strong
Compensation	0/810	0/489	Medium
Relationship	0/745	0/520	Strong
Distributive justice	0/499	0/272	Medium
Procedural justice	0/522	0/280	Medium
Interactional justice	0/422	0/281	Medium
Customer satisfaction	0/649	0/380	Strong

Table 4 Results of hypothesis testing

<i>Hypotheses</i>	<i>Path</i>	<i>Path coefficient</i>	<i>T-value</i>	<i>Result</i>
1	Electronic service recovery/interactional justice	0/650	15/520	Support
2	Electronic service recovery/procedural justice	0/723	25/162	Support
3	Electronic service recovery/distributive justice	0/706	19/307	Support
4	Interactional justice/customer satisfaction with electronic recovery service	0/234	4/109	Support
5	Procedural justice/customer satisfaction with electronic recovery service	0/251	3/488	Support
6	Distributive justice/customer satisfaction with electronic recovery service	0/233	4/492	Support
7	Interactional justice/customer satisfaction with electronic recovery service/moderating role of value co-creation	-0/053	0/885	Unsupport
8	Procedural justice/customer satisfaction with electronic recovery service/moderating role of value co-creation	0/017	-0/288	Unsupport
9	Distributive justice/customer satisfaction with electronic recovery service/moderating role of value co-creation	-0/073	1/445	Unsupport
10	Electronic service recovery/customer satisfaction with electronic recovery service/mediating role of interactional perceived justice	0/152	3/960	Support
11	Electronic service recovery/customer satisfaction with electronic recovery service/mediating role of procedural perceived justice	0/181	3/450	Support
12	Electronic service recovery/customer satisfaction with electronic recovery service/mediating role of distributive perceived justice	0/165	4/356	Support

Guggenheim strategic opportunities fund (Gof) is used for evaluating the model through the partial least square method (PLS). A Gof equal to or larger than 0.5 shows the goodness of the model (Tenenhaus et al., 2005). A Gof of 0.643 obtained for the first

model indicates the fitness of the research model. After confirming model fitness, hypotheses can be tested.

The Sobel test was used to examine the significance of the mediating variable. The statistics Z used in this test is obtained from the following formula where a Z value larger than 1.96 means the significance of the effect of the mediating variable at a level of 5%. Table 4 summarises the results obtained for the research hypotheses at a significance level of $p < 0.05$.

6 Discussion, conclusions, and suggestions

Customer satisfaction with ESR differs from customer-perceived distributive, procedural, and interactional justice. A good SR system should identify and solve problems and prevent customer dissatisfaction. It also should be designed to encourage and learn from customer complaints. This study investigated the mediating role of customer-perceived justice in the relationship of ESR strategies and satisfaction of Alpha Bank customers with SR. According to the results, the hypotheses regarding the moderating role of co-creation in the relationship of perceived justice and satisfaction with ESR were not confirmed. This can be examined from three aspects. First, it can be related to the lack of interaction, inappropriate human communications, and untimely feedback to customer comments by the bank. Most customers of Alpha Bank believe that their comments are not considered and their suggestions are not used in practice. The second aspect can be explained by economic, relational, and pleasure values of value co-creation. Considering the relational dimension of value co-creation (value obtained from emotional and/or communication bonds between the customer and service providers), most customers of Alpha Bank have not yet perceived a value from their interactions with the bank. This is another reason for rejecting this hypothesis. In this regard, Xu et al. (2014) rejected the effect of customer-perceived distributive justice with the moderating role of co-creation on customer satisfaction with ESR. Proper ESR strategies should consider the needs, values, and views of all customers; something which is not implemented in Alpha Bank. Therefore, there is no suggestion for a procedure to reduce customer dissatisfaction with SF (Cheung and To, 2016). The third aspect is related to the value co-creation behaviour including participatory and citizenship behaviours. Customers look for value in participatory behaviour by searching and sharing information, responsible behaviour, and individual interaction. The increased distrust in the studied population that promotes individualism significantly reduced the participatory and citizenship behaviours of customers. Hence, there is no willingness for cooperating with the bank in the design of SR methods. Below, the results of hypotheses concerning the mediating role of customer-perceived justice in the relationship between ESR strategies and customer satisfaction with ESR are discussed.

The results confirmed the mediating role of perceived interactional justice in the relationship between ESR strategies and customer satisfaction with ESR. To explain this result, it can be argued that the empathy and sympathy of service providers play a key role in ESR and customer satisfaction. It is assumed that customer perceptions are affected by the way they are treated. Several studies in the management literature revealed that employees show more willingness to accept decisions when the manager behaves respectfully leading to a more favourable evaluation process. Similarly, in the event of inappropriate service provision, customer satisfaction increases if the service

provider openly shows his/her concern and interest in the SR process (Tax and Brown, 1998). As previously mentioned, establishing interactional justice with customers is less costly for an organisation than other justice dimensions. According to the literature, the polite and sympathetic behaviour of organisational managers and staff in solving problems will help to reduce dissatisfaction and improve the SR process. In contrast, rude and careless behaviour will exacerbate customer dissatisfaction and increase SFs.

Compensation is insignificant in the case of low interactional justice, implying that the bank is not eager to compensate for its mistakes and does not propose a satisfactory solution to electronic problems faced by customers. The results of Gelbrich and Roschk (2011) and DeWitt et al. (2008) are consistent with this hypothesis. The bank is recommended to improve the capabilities of its staff for identifying different groups of customers with different expectations and tastes by holding training courses and workshops. It should also take appropriate SR strategies to realise the diverse expectations of these groups. In this way, a larger number of customers will be satisfied.

The results obtained from testing the other hypothesis confirmed the significant positive effect of ESR on customer satisfaction with ESR strategies by the mediating role of procedural justice. To interpret this result, it can be stated that procedural justice guides customer perceptions for justifying the organisational behaviour in executing necessary SR processes and procedures (Lambert, 2003). The reaction of customers to procedures is dependent on customer-perceived procedures rather than their actual nature because humans do not psychologically behave based on realities but react based on perceived realities. SR drives organisations to develop their procedures and instructions. According to Tax and Brown (1998), when proper compensation is provided to customers by unfair procedures, it will lose its effectiveness and eventually lead to customer dissatisfaction. The results of Homburg and Fürst (2005) and Maxham and Netmeyer (2002) also confirm this relationship. In this regard, the bank is recommended to develop SR procedures and train its staff. Moreover, considering the key role of time in the SR process and the effect of the timely response of employees on increased customer satisfaction with SR, the bank is recommended to delegate authority to its employees to make related decisions. Finally, the results of the other research hypothesis confirmed the mediating role of distributive justice in the relationship between ESR strategies and customer satisfaction with ESR. To interpret this result, one can argue that when a transaction or a banking operation fails, customers expect the bank to take full responsibility and appease its customers by taking proper SR methods. Compensation of failures in the service provision process may positively affect the trust between the bank and customers and eventually improve customer satisfaction (Grönroos, 2000). This result is consistent with those reported by Smith et al. (1999) and Voorhees and Brady (2005). To improve customer satisfaction, the bank is recommended to take measures for selecting the ESR strategies by customers through different service provision systems. For example, an option can be considered in the mobile bank services to provide customers with different options for SR (fee exemption and more points in the customer club) in the case of a failed transaction.

6.1 Limitations and recommendations

Considering the extent of the ESR literature, this study faced some limitations, which may be a basis for future research works. Given that the sample consisted of bank customers, the results may not be generalised to manufacturing organisations.

Nonetheless, with little consideration, the results of this study can be used in other similar service organisations such as education and research, tourism and hospitality, and insurance organisations due to the possibility of SFs.

This study is a survey in which the data were collected using a questionnaire. As a result, it faced limitations arising from the nature of this measurement tool (e.g., the effect of various environmental factors on respondents' comments). Another limitation was the service context of the present study. Here, only one service context is used and it is suggested that future studies take more contexts (POS, ATM, and Kiosk Banking) in investigating SF. Moreover, some other variables such as culture, the severity of SF, and citizenship behaviour were not investigated in this study in order to reduce the model complexity. Considering the significant role of culture in evaluating services and customer-perceived SF and SR efforts, and given the multi-culture nature of the Iranian society, the role of cultural factors should be considered in the form of a variable in the model or as a coherent whole capable of covering the entire model. In this study, co-creation was considered a moderator variable in the relationship between customer-perceived justice and customer satisfaction with ESR. However, value co-creation has economic, relational, and pleasure dimensions. Due to time limitations and the complexity of the model, these three dimensions were not considered in the research model and are recommended to be taken into account in future studies.

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Notes

- 1 The sample consisted of customers of the northeast branches of the second largest commercial bank in Iran. At the bank's request, it was named Alpha Bank for anonymity.